Courses Taught in English

National Taiwan University 2010

Teamwork, Accountability, Integrity, Diligence, Ambition/Vision
ABOUT THIS BOOK

This handbook provides you with a comprehensive survey of the NTU curriculum. It contains a list of all academic departments, their credits requirement and a brief introduction of general and liberal education courses available, as well as, information relating to English-taught courses at NTU.

More specifically this book contains:

- A list of Academic departments offering undergraduate programs to international students and relevant credits requirement.
- The general and liberal education courses are designed to ensure Chinese and foreign language proficiency and encourage a well-rounded university career, these courses are different from other required and elective courses provided in NTU.
- International students are welcome to participate in any English-taught courses, courses limited to local students have been removed from this handbook. In total, there are 625 English-taught courses listed, however, all information is based on 2007-09 course availability, please remember to check the office of Academic Affairs website for current availability.

There are some additional international programs at NTU, which have been created specifically for international students. The contact information of each college is also provided if you require further information.

Hoping that you can get useful information from this brochure.

Office of International Affairs,
National Taiwan University
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Degree Programs Open to International Students in Academic Year 2010/2011
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ABOUT NTU

Located in downtown Taipei, National Taiwan University (NTU) is the first university in Taiwan. Its history can be traced back to the early 20th century, formally known as the Taihoko (Taipei) Imperial University founded by the Japanese in 1928. After World War II and Taiwan’s retrocession to Chinese Sovereignty, the ROC (Taiwan) government resumed the administration of Taihoko University and renamed it as “National Taiwan University” in 1945. Meanwhile, the university consisted of six colleges (Liberal Arts, Law, Science, Medicine, Engineering, and Agriculture) and 22 departments. To date, the University continues to prosper and throughout the years has educated millions of professionals. In 2008, the University has a total of 11 colleges, 54 departments, 100 graduate institutes, and 33 research centers, and the number of students reached a total of 33,416.

Being the first integrated and most prestigious institution of higher education in Taiwan, National Taiwan University has taken up the responsibility of promoting the level of academic research and teaching in Taiwan, and is renowned for its free atmosphere of academic thought. The University thus sets its objective for development in four major fields: humanities, social science, biology, and physics. To coordinate with the demands of our national and social developments, the University plans to expand, as needs be, those departments and institutes of high applicability into various professional colleges beyond its present 11 colleges. On the other hand, to satisfy modern people's wish for multifarious knowledge offered in college and to fulfill the social function of college education through feedback, the University also promotes programs of life long learning by giving on-job training to people in need, in order to lay a solid foundation for the lifetime education of an ideal adulthood in the 21st century. In addition, to further broaden its international scope and reach, the University intends to establish more exchange programs and cooperative agreements with reputable universities all over the world.
MESSAGE FROM THE DEAN

Greetings from National Taiwan University and warm welcome from the NTU Office of International Affairs. The OIA team and I have devoted ourselves in expediting the goals of comprehensive internationalization in the NTU campus. As part of the international initiatives, investing substantial efforts in building a curriculum of courses taught in English becomes crucial. Currently there are about 700 English-taught courses in 11 colleges per Academic year, which constitute about 5.8% of the total number of courses taught at NTU.

On behalf of the OIA team and the faculty and staff of National Taiwan University, I hope you will find it useful as you explore this handbook and the various disciplines that fostered these English-taught courses. Consequently, I wish you will join us in bringing your parts of the world to National Taiwan University, and experience our culture and versatile campuses at NTU. Thank you.

Sincerely yours,

Tung Shen, PhD
Dean of Office of International Affairs
National Taiwan University
CREDITS REQUIREMENT
List of Colleges and Departments in Undergraduate Program

◎ College of Liberal Arts
* Department of Chinese Literature (at least 128 credits must be completed)
* Department of Foreign Languages and Literatures (at least 138 credits must be completed)
* Department of History (at least 128 credits must be completed)
* Department of Philosophy (at least 128 credits must be completed)
* Department of Anthropology (at least 138 credits must be completed)
* Department of Library and Information Science (at least 139 credits must be completed)
* Department of Japanese Language and Literature (at least 140 credits must be completed)
* Department of Drama and Theatre (at least 128 credits must be completed)

◎ College of Science
(at least 128 credits must be completed for all departments, except for Geography)
* Department of Mathematics
* Department of Physics
* Department of Chemistry
* Department of Psychology
* Department of Geosciences
* Department of Atmospheric Sciences
* Department of Geography (at least 129 credits must be completed)

◎ College of Social Sciences
(at least 128 credits must be completed for all departments, except for Economics)
* Department of Political Science
  ● Division of Political Theory
  ● Division of International Relations
  ● Division of Public Administration.
* Department of Economics (at least 130 credits must be completed)
* Department of Sociology
* Department of Social Work

◎ College of Medicine
* Department of Medicine (at least 288 credits must be completed)
* Department of Pharmacy (at least 136 credits must be completed)
* Department of Nursing (at least 128 credits must be completed)
* Department of Clinical Laboratory Sciences and Medical Biotechnology (at least
Credits Requirement

131 credits must be completed)

* Department of Occupational Therapy (at least 144 credits must be completed)
* School of Physical Therapy (at least 140 credits must be completed)

◎ School of Dentistry
* Department of Dentistry (at least 258 credits must be completed)

◎ College of Veterinary Medicine
* Department of Veterinary Medicine (at least 182 credits must be completed)

◎ College of Engineering
* Department of Civil Engineering (at least 141 credits must be completed)
* Department of Mechanical Engineering (at least 140 credits must be completed)
* Department of Chemical Engineering (at least 140 credits must be completed)
* Department of Engineering Science and Ocean Engineering (at least 140 credits must be completed)
* Department of Materials Science and Engineering (at least 135 credits must be completed)

◎ College of Bioresources and Agriculture
* Department of Bioenvironmental Systems Engineering (at least 134 credits must be completed)
* Department of Agriculture Chemistry (at least 135 credits must be completed)
* Department of Agricultural Economics (at least 130 credits must be completed)
* Department of Entomology (at least 130 credits must be completed)
* Department of Bio-industrial Mechatronics Engineering (at least 141 credits must be completed)

(at least 128 credits must be completed for following departments)
* Department of Plant Pathology and Microbiology
* Department of Forestry and Resource Conservation
* Department of Animal Science and Technology
* Department of Agronomy
* Department of Bio-industry Communication and Development
* Department of Horticulture
○ **College of Management**
  * Department of Business Administration (at least 138 credits must be completed)
    - Division of Business Administration
    - Division of Technology Management
  * Department of Accounting (at least 139 credits must be completed)
  * Department of Finance (at least 141 credits must be completed)
  * Department of International Business (at least 140 credits must be completed)
  * Department of Information Management (at least 141 credits must be completed)

○ **College of Public Health**
  * Department of Public Health (at least 128 credits must be completed)

○ **College of Electrical Engineering and Computer Science**
  * Department of Electrical Engineering (at least 137 credits must be completed)
  * Department of Computer Science and Information Engineering (at least 136 credits must be completed)

○ **College of Law**
  * Department of Law (at least 150 credits must be completed)
    - Division of Legal Science
    - Division of Judicial Administration
    - Division of Economic and Financial Law

○ **College of Life Science**
  (at least 128 credits must be completed for both departments)
  * Department of Life Science
  * Department of Biochemical Science and Technology

★ Student Service Education (I), (II) and (III) are compulsory, with zero credits. And Physical Education earns 4 credits, but will not be included in the total number of credits needed for graduation.
GENERAL AND LIBERAL EDUCATION COURSES

Ever since its inception, the Center for General Education has striven to enrich the content of general and liberal education, and to fulfill the ideal of a "well-rounded education". The original general and liberal education curricula were first implemented in academic year 1997, has remained largely unchanged except for a few minor adjustments to course requirements and credit hours. However, starting in academic year 2007, major changes to both general and liberal education curricula were put into effect. The curricula below apply to students admitted to the University in or before academic year 2006 and for those admitted in or after academic year 2007.

* General and Liberal Education description

General Education—including Chinese Literature, Foreign Languages, Physical Education, and Student Service Education. It aims at cultivating students’ critical thinking and strengthening communication skills, as well as strengthening the spirit of team cooperation and social responsibility.

Liberal Education—including 8 major areas, ranging from Literature and Social Sciences, to Natural Science and Life Sciences. The main purpose of the Liberal Education program is to broaden students’ mind and experience so that students possess not only the professional knowledge but also general knowledge of different domains.

* General and Liberal Education Curricula for Students Admitted to the University in or after Academic Year 2007

1. Credits:

   The total credits needed for graduation

   (1) General Courses: Total 12 Credits

      "Chinese Literature" – 6 Credits: With the goal of improving the students' Chinese Language proficiency and cultural accomplishment.

      "Foreign Languages" – 6 Credits: With the goal of training the students' foreign language skill.

   (2) Liberal Education Curriculum: Undergraduate students admitted to the University in or after academic year 2007 should get 18 credits for general education courses.

2. Liberal Education Curriculum:

   The major areas of Liberal Education Curriculum and the total credits needed for graduation
General and Liberal Education Courses

(1) Effective from academic year 2007 the general education curriculum covers 8 major areas. Students are required to earn at least 18 credits for liberal education courses.

<table>
<thead>
<tr>
<th>(A1) Literature and Arts</th>
<th>(A2) Historical Thinking</th>
<th>(A3) World Civilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A4) Philosophy and Moral Reasoning</td>
<td>(A5) Civil Awareness and Social Analysis</td>
<td>(A6) Quantitative Analysis and Mathematics</td>
</tr>
<tr>
<td>(A7) Material Sciences</td>
<td>(A8) Life Sciences</td>
<td></td>
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</tbody>
</table>

(2) Students should study the liberal education courses specifically required by their department as documented in the "Table of General Liberal Education Curriculum areas Required by each the College/Department" published by the CGE. Students should study at least one course subject in each other specified specific areas of study. If a student chooses to take liberal education courses from a study area that is not required by their department, then the credits for these courses will not be counted as LEC credits.

International students are exempted from these restrictions as depicted in (2).
Deciduous fruits (temperate fruit crops) constitute to be a great portion of the world fruit industry and science. The diversity and the uniqueness of the location and the climate of Taiwan enable deciduous fruit to be produced in the subtropical and tropical areas. Over the years Taiwan has developed some unique production systems and great research potentials of deciduous fruit crops. Deciduous Fruits I provides information on major economical deciduous fruit crops with emphasis on pome fruits, stonefruit, persimmons and some other minor woody deciduous fruit crops. (l) '08-1, '09-1

Prerequisite: Pomology or equivalent

3 hr means three hours a week.
3 cr. means students can get three credits if they pass this course.
102E11600

Media English
Lecture – 3hr/3cr. Yanwing Leung

This course examines written English used in the electronic and ordinary media and in media-dependent programs and publications. We will cull samples from the Internet, cable TV programs, magazine and newspaper ads, as well as from on-line English learning programs. (II) '08-2
Prerequisite: n/a
URL: n/a

102E14201

Approaches to Literature (1)
Lecture/Discussion – 3hr/3cr. Chi-She Li

This course is designed to train students to develop the ability to construct autonomously reading responses that are both aesthetic and interpretive. Each session will be composed of workshops, lectures and whole-class discussions. In addition to analytical skills of reading the three major genres of literature, including short story, poetry and drama, the students will also learn how contexts are significant in appreciating a wide spectrum of meanings generated from a specific text. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981literature

102E14202

Approach to Literature (2)
Lecture/Discussion – 3hr/3cr. Hao-Han Huang.

Journey through the colossal realms of poetry and drama and scrutinize some of the literary urns or architectures in The Norton Introduction to Literature. (II) '07-2, '08-2
Prerequisite: Approach to Literature(1)
URL: https://ceiba.ntu.edu.tw/972lit2_3

102E20610

Newsletter Practicum (I)
Lecture – 3hr/3cr. Michael Keevak

Intensive writing course: produce, distribute and update the Department of Foreign Language and Literature’s foreign language newsletter, “The Foreign Exchange,” learn how to research, write, edit, rewrite their stories, as well as how to produce an attractive layout. (I) '08-1
Prerequisite: Instructor’s permission required.
URL: n/a

102E20620

Newsletter Practicum (II)
Groupwork – 3hr/3cr. Pao-I Hwang

Brainstorming and sharing of ideas, outlines, and drafts of newsletter by groupwork. Finalize layout and printer. Distribution. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/7e50c2/index.htm

102E21111

Introduction to Linguistics (1)
Lecture – 3hr/3cr. Shan-Shan Wang

Introduction of linguistics, investigate the basic theories and methods of the different core sub-fields of linguistics: phonetics, phonology, morphology, syntax, and semantics. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/c1f667/index.htm

102E21112

Introduction to Linguistics (2)
Lecture – 3hr/3cr. Shan-Shan Wang.

Introduction of linguistics, including historical linguistics, classification of languages, first and
second language acquisition, and brain and language. (II) '08-2
Prerequisite: Introduction to Linguistics (1)
URL: https://ceiba.ntu.edu.tw/course/0d789c/index.htm

102E22611
Latin (I) (1)
Lecture – 3hr/3cr. Eward Partingtong
Basic course in Latin prose and poetry, does not assume any prior knowledge of the language, translate from English into good idiomatic Latin or in both directions. Less attention will be given to etymology. Only the most common derivatives will be cited. (I) '08-1, '09-1
Prerequisite: n/a
URL: n/a

102E22612
Latin (I) (2)
Lecture – 3hr/3cr. Eward Partingtong
Basic course in Latin prose and poetry. Learning to translate from English into good idiomatic Latin. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

102E22811
Ancient Greek (I) (1)
Lecture – 3hr/3cr. Vasileios Vagios
The aim of the course is to teach reading ancient Greek as quickly, thoroughly and enjoyably as possible, and to do so within the context of ancient Greek culture, without presupposing any knowledge at all of either the language or the culture. The passages that will be studied will be accompanied by narratives in English and illustrations drawn from ancient works of art, which will provide background information and deepen one’s understanding of some aspects of the history and culture of ancient Greece. (I) '09-1
Prerequisite: n/a
URL: n/a

102E23000
English Literature to 1600
Lecture – 3hr/3cr. Michael Keevak
Survey of trends in English literature and the English literary tradition from Beowulf through Shakespeare, covering the Anglo-Saxon period, middle English literature, and literature of the English Renaissance. (I) '08-1
Prerequisite: n/a
URL: n/a

102E23100
British Literature 1600-1800
Literature – 3hr/3cr. Bi-qi Beatrice Lei
Survey of English literature from Shakespeare's drama through Samuel Johnson. Multimedia materials, especially film clips of the dramatic works. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/f51d32/index.htm

102E23120
English Literature to 1600
Lecture/Discussion – 2hr/2cr. Jinghuey Hwang
This course will introduce a variety of texts written in Britain during the Middle Ages and the sixteenth century. The survey will give students a sense of the literature's richness, in terms of genres and themes. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981EngLitPre1600

102E23150
Sixteenth-Century English Literature
Lecture – 3hr/3cr. Michael Keevak
An introduction to the English literary tradition of
the sixteenth century, covering poetry and prose works; the course will be especially interested in investigating English knowledge about the rest of the world during this period. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

102E23160
Seventeenth-Century and Eighteenth-Century English Literature
Lecture – 3hr/3cr. Tien-Yi Chao

The lecture will focus on a selection of texts by various authors, ranging from John Donne to Samuel Johnson, and including female writers such as Margaret Cavendish. A brief introduction to the context of each historical period and text will also be available. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981elit

102E23170
English Romanticism
Lecture – 3hr/3cr. Ya-Feng Wu

This course surveys British Literature in the period of Romanticism. It is designed to facilitate students to form a well-rounded knowledge of the literature of this period by close reading of the texts, and to cultivate a sensibility to the continuity of literary history. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981_romantic

102E23180
Victorian Literature
Lecture – 3hr/3cr. Vivienne Ruth Westbrook

This course will introduce students to the political, religious and social contexts of a wide range of literature written during the Victorian period. Having surveyed relevant background material students will read some of the major novels, poetry and drama of the period so that they may be acquainted with a wide range of treatments of the big Victorian issues. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981victorian_lit

102E23190
Twentieth-Century English Literature
Lecture – 3hr/3cr. Li Ling Tseng

(I) '09-1
Prerequisite: n/a
URL: n/a

102E23200
European Literature 1350-1800
Lecture – 3hr/3cr. Duncan Chesney

The course is a two-semester sequence covering the major works of non-Anglo-Saxon European literature. The first semester covers the Renaissance and the Enlightenment, notably selections from the works of Petrarca, Rabelais, Montaigne, Cervantes, Racine, and Voltaire. (I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981_eurolit1

102E23300
European Literature since 1800
Literature – 3hr/3cr. Duncan Chesney

A continuation of the sequence of continental European literature. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972_eurolit2

102E24110
Fiction (I)
Lecture/ Discussion – 4hr/3cr. Ya-Feng Wu

Guide students through the then popular subgenre, the Gothic fictions, by close reading five of the classics. Audio-visual materials will be employed, if necessary, to illustrate certain issues and to give an overall understanding of the historical milieu. (I) '08-1, '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: https://ceiba.ntu.edu.tw/971fiction
102E24110
Fiction (I)
Lecture – 3hr/3cr. S.Y. Lin
Help students become more critical and informed readers, more comfortable with the terminology used across the broad spectrum of English fiction, and more able to apply theoretical concepts in their literary interpretations. (I) '08-1
Prerequisite: n/a
URL: n/a

102E24120
Fiction (II)
Literature – 3hr/3cr. Li-Ling Tseng
Examine in detail three novels: The Great Gatsby, Heart of Darkness, and To the Lighthouse. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972Fiction_II

102E24430
Introduction to Phonetics (with Pronunciation Practicum) (I)
Lecture – 4hr/3cr. Karen Steffen Chung
This course is designed to train future English teachers and others in the phonetics and correct pronunciation of standard American English. It will offer a solid grounding in phonetic theory, but the main emphasis will be on sharpening students' sensitivity to the sounds of language, and on actual practice, mainly through oral reading of the textbook, class discussions, and practice dictations. (I) '08-1 '09-1
Prerequisite: 10221112 語言學概論
URL: http://ceiba.ntu.edu.tw/981phonF09

102E24440
Introduction to Phonetics (with Pronunciation Practicum) (II)
Lecture – 4hr/3cr. Karen Steffen Chung
It will offer a solid grounding in phonetic theory, but the main emphasis will be on sharpening students' sensitivity to the sounds of language, and on actual practice, mainly through oral reading of the textbook and class presentations. Each student will keep a pronunciation journal to record problem areas of pronunciation, and will be expected to take class notes on material not covered in the textbook. (II) '08-2
Prerequisite: n/a
URL: n/a

102E32621
Latin (II) (1)
Lecture–3hr/3cr. Eward Partingtong
After a short review of the entire text we will be doing a selection of passages from Loci Antiqui and Loci Immutati in the back of Wheelock’s text, An intensive examination of the poets Catullus and Horace. (I) ‘08-1, ’09-1
Prerequisite: Latin (I) (2)
URL: n/a

102E32622
Latin (II) (2)
Literature – 3hr/3cr. Eward Partingtong
More unadapted passages from the ancient authors and intensive examination of the poets Catullus and Horace. Selections from Cicero's Oration against Verres, Livy's History Of Rome, Ovid's Metamorphoses, Cicero's Philosophica, and medieval Latin from The Vulgate and medieval hymns and drinking songs; a comparison of the Letters of Cicero and Pliny; (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

102E33000
English Literature 1800-1900
Lecture / Discussion – 3hr/3cr. Pao-I Hwang
Read and appreciate both poetry and prose, occasionally approach a text through the writer’s personal history, practice researching and presenting information on writers and their works, engage in critical discussions and analysis, build skills for evaluating good or bad writing. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971englit08

102E33100
English Literature since 1900
Lecture – 3hr/3cr. Chi-She Li
Explore prose and poetry in the period between 1830 and 1930 in literary, social, historical and cultural context. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972englit

102E34250
Literature and Gender
Seminar – 3hr/3cr. Hsiu Chih Tsai
This course is designed to offer as an introduction to the current approaches of gender studies and provide a solid understanding of the relevance and importance of gender issues in reading and interpreting literary texts. (II) '07-2
Prerequisite: n/a
URL: n/a

102E35200
Introduction to Second Language Acquisition
Lecture – 3hr/3cr. Wen Hsien Hsu
The course will discuss and examine key issues in second language learning and teaching from the interdisciplinary perspectives of linguistics, psychology, and education. (I) '09-1
Prerequisite: n/a
URL: n/a

102E36120
Contrastive Analyses of Mandarin Chinese and English
Lecture/Discussion – 3hr/3cr. Zhao Ming Gao
(I) '08-1
Prerequisite: n/a
URL: n/a

102E39850
Irish and World Theatre
Seminar – 2hr/2cr. Wei-Hung Kao
This course aims to familiarize students with texts that address playwrights’ concerns for different human weaknesses and social symptoms since the early 20th century. (II) '07-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962wtt

102E39860
Twentieth-Century Irish Drama
Lecture – 2hr/2cr. Wei-Hung Kao
An overview of the development of the Irish theatre and its social contexts, study dramas by playwrights in different religious, political persuasions, and of different genders, in an attempt to unveil the changing faces of Ireland in its process of political independence, cultural de-colonization, and a series of social changes. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971irishdrama_1

102E40610
Journalistic Writing (I)
Lecture/Discussion – 3hr/3cr. Michael Keevak
Writing: a course which edits and produces the DFLL newsletter, “The Foreign Exchange.” Substantial willingness to take on responsibility and the ability to work with others are required. A short writing test will be given on the first day of class, and the final participants chosen soon thereafter. (I) '09-1
Prerequisite: n/a
URL: n/a

102E43050
Twentieth-Century American Literature
Lecture – 3hr/3cr. Yu-Hsiang Fu
Focus on the relationship between historical survey and textual analysis. We will work around repositories of themes. In other words, a key purpose of this course is to explore the text rather than situate it – to help students talk about voice, style, poetics, and rhetorical strategy and understand how community affiliation, minority status, or other pressures on a given artist affect the choice and ordering of words on the page. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981American_Lit

102E43230
Reading English Fiction (I)
Lecture – 3hr/3cr. Timothy Casey
Enhance English vocabulary through an intensive reading of Pride and Prejudice, small-group discussions and showings of videotapes of Jane Austen’s life and Pride and Prejudice. (I) ‘09-1
Prerequisite: n/a
URL: n/a

102E43240
Reading English fiction (II)
Literature – 3hr/3cr. Timothy Casey
This semester’s novel will be Charles Dickens’ David Copperfield, supplemented by videotapes on Dickens’ life and work and by occasional small-group discussions. (II) ‘07-2, ‘08-2
Prerequisite: n/a
URL: n/a

102E44510
Technology and Literature
Lecture – 3 hr/3cr. Chaoyang Liao
(I) ‘08-1
Prerequisite: n/a
URL: n/a

102E45010
Rhetorical Analysis of Peace
Discourse since 1900
Literature – 3hr/3cr. Theresa D.-L. Yeh
War- and peace-related public discourse as rhetorical phenomena, how people interpret past conflicts and advocate beliefs and values embedded or inherent in the culture of peace/war. (II) ‘08-2
Prerequisite: n/a
URL: http://homepage.ntu.edu.tw/~theresay/

102E45030
Gender and Communication
Lecture – 3hr/3cr. Theresa Der La Yeh
A survey of contemporary theories and research regarding the interaction between gender and communication, emphasis will be given to a variety of factors and contexts involved in daily communication such as language, nonverbal messages, interpersonal and familiar relationships, educational process, mass media, and work place. (I) ‘08-1
Prerequisite: n/a
URL: n/a

102E45630
Canadian Literature: Studies in Anglophone and Francophone Literatures
Seminar – 3hr/3cr. Yu-Hsiang Fu
We will study a combination of stories and political essays from Anglophone, Francophone or Allophone writers. These stories (excerpts for longer works) will be studied in conjunction with critical essays about the ongoing political and cultural debates in Canada. (II) ‘07-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962Canlit

102E45640
Asian North American Literature
Literature – 3hr/3cr. Yu-Hsiang Fu
Introduction of Asian North American literature, including Canada and the U.S.A., emphasize the recurring themes and the bi-cultural contexts. (II) ‘08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972Asian_American

102E47210
Philosophy and Literature (I)
Lecture – 3hr/3cr. Kirill Ole Thompson
Our project in this course is to undertake careful readings of literary texts with recognized philosophic contents, and/or philosophic texts presented in a literary format. Such texts are usually of special interest, for they tent to bring philosophic concepts and issued closer to human life and to add deeper dimensions of meaning to literature. (I) ‘08-1
Prerequisite: n/a
URL: n/a

102E47220
Philosophy and Literature (II)
Lecture – 3hr/3cr. Kirill Ole Thompson
This spring we will probably examine some literary philosophic texts of three eras: Greek pre-Socratic, Roman Hellenistic, and Chinese Taoist. Among the pre-Socratic texts, I am particularly interested in reading the poetic writings of Heraclitus and Parmenides. (II) '08-2

Prerequisite: n/a
URL: n/a

102E49111
English Composition (I) (1)
Lecture – 2hr/2cr. Yu-Hsiang Fu
This course is intended for students who need practice in basic grammar and usage, sentence structure, punctuation, summarizing and paragraph writing. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981composition

102E49112
English Composition (I) (2)
Lecture – 2hr/2cr. Yu-Hsiang Fu
This semester we will also put another different element in the syllabus: creative writing. There will be an in-class vocabulary quiz each week, so the students have to get prepared before coming to class. Each student will have to read a novel of his/her own choice and submit four summaries (divisions decided by the student) this semester even though these book summaries will not be graded. (II) '08-2
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/972Composition1

102E50111
English Oral Training (I) (1)
Lecture/Discussion – 3hr/3cr. Judy Wai-Kei Kwong
This oral training course provides the opportunity for students to practice their English in the listening and speaking skill areas. Students will be discussing on a variety of topics under the guidance of the teacher. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

102E50112
English Oral Training (I) (2)
Lecture/Discussion – 3hr/2cr. Kirill Ole Thompson
The first year students are taught using a situational/notional/functional approach. These are communicative methods of instruction which are student-centered rather than teacher-centered. These approaches require the students to interact in small group discussions and activities. The teachers also focus on providing the basic principles of correct English pronunciation. (II) '08-2
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

102E53100
Business English
Literature – 2hr/2cr. Janette Custodio Yuvienco
Familiarize students with concepts and competencies associated with innovative management in a fast changing business environment. (I) (II) '07-2, '08-1, '08-2, '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981buseng

102E53601
Introduction to Interpretation (1)
Lecture – 3hr/3cr. May Tang Li-Ming
The training of the skills will gradually lead to the ability to interpret accurately and fluently between English and Chinese a 3-5 minute long message with notes. Topics for interpretation will range from general ones in the beginning to more technical ones, with gradual emphasis on Economics, Politics and Information. (I) '08-1
Prerequisite: n/a
URL: n/a

102E53602
Introduction to Interpretation (2)
Lecture – 3hr/3cr. May Tang Li-Ming
This course is designed to introduce to students
basic skills for consecutive interpretation. This skills will gradually lead to the ability to interpret accurately and fluently from English into Chinese a short oral message on general topics without notes or message 2-3 minutes long with notes. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

102E53611
Advanced Interpretation (1)
Lecture – 2hr/2cr. Zhang Jia-Qian

Introduction of interpreting as a profession and its two main modes: consecutive interpreting and simultaneous interpreting, interpret a wide range of general, political, economic, and technical speeches, various strategies used by experienced interpreters, opportunities to utilize your language skills by serving as speakers, interpreters, and audience. First semester-consecutive interpreting, second semester- simultaneous interpreting. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981introtoSI

102E53612
Advanced Interpretation (2)
Literature – 2hr/2cr. Zhang Jia-Qian

Interpret a wide range of general, political, economic, and technical speeches. First semester-consecutive interpreting, second semester- simultaneous interpreting. (II) ’07-2, ’08-2
Prerequisite: Advanced Interpretation (1)
URL: https://ceiba.ntu.edu.tw/972SI2009

102E53800
Special Topics in Foreign Language Teaching
Lecture – 3hr/3cr. Hong Ying Hsu

The major objective of this course is to provide students with an overview of the theoretical bases of the communicative approach to language teaching or as some researchers and practitioners prefer to call, the communicative language teaching (CLT). (I)(II) ’07-2, ’08-1
Prerequisite: n/a
URL: n/a

103E51320
Early Modern Science and Medicine
Discussion/Literature – 3hr/3cr. K.C. Chang

Introductory survey to early modern science and medicine through close reading of selective primary materials. GC credit: A2/A3 (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972EMSM

104E12900
Intermediate Logic
Lecture – 3hr/3cr. Chin Mu Yang

This course is in essence an intermediate-level course for formal logic. I shall hence assume that the student has a nodding acquaintance with topics in Elementary Logic. (I) ’08-1
Prerequisite: n/a
URL: n/a

104E19000
English in Philosophical Works
Lecture – 2hr/2cr. Van Doan Tran /Wim De Reu

Train students’ ability to read philosophical texts, Comprehend the meaning of philosophical items and terminologies, Find out and summarize the crucial thesis of philosophical texts, Rewrite philosophical texts in Chinese or English. (I)(II) ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: n/a

107E31201
English-Japanese Translation (1)
Lecture – 2hr/2cr. Masae Toyochi Hsieh

Apply the “communicative approach” to help students achieve the intermediate level of English-Japanese language skills, help students learn how to speak and act appropriately when they are with foreigners whose main language is either English or Japanese, stimulate students to acquire a sense of leadership and responsibility as mature individuals. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a
107E31202
English-Japanese Translation (2)
Literature – 2hr/2cr. Masae Toyochi Hsieh

Apply the “communication approach” to help student speak and act appropriately with foreigners whose main language is either English or Japanese in business and social environment. (II) '07-2, '08-2
Prerequisite: English-Japanese Translation (1)
URL: n/a

109E24450
Computer Aided Costume Design (I)
Lecture/Discussion – 2hr/2cr. Anne O. Cleveland

This is a course in the theory and practice of theatrical costume design. Special emphasis will be placed on rendering techniques and how computer aided design applications assist in the translation and communication of theatrical visual ideas. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program) AND Limited to undergraduate students of sophomore year and beyond
URL: http://ceiba.ntu.edu.tw/981costumedesign

109E24460
Stage Makeup
Seminar – 3hr/3cr. Anne O. Cleveland

This course will investigate the conceptualization, design, and execution of theatrical stage makeup. The course will be structured around lectures, demonstrations, and practical application of a variety of makeup techniques. (I) '09-1
Prerequisite: 109 24310 Costume Construction( I )
URL: http://ceiba.ntu.edu.tw/981stagemakeup

122ED1870
Levinas and Western Ethical Traditions
Seminar – 3hr/3cr. Kirill Ole Thompson

This course will explore some of Levinas’ main ethical themes and insights, such as freedom and responsibility, violence and the self, good and evil, justice and responsibility, God and atheism, against the background of western ethical traditions, both the mainstream traditions, and specific traditions leading to Levinas. (I) '09-1
Prerequisite: Limited to doctoral degree students
URL: n/a

122EM0390
English Writing
Seminar– 3hr/3cr. Duncan Chesney

This course is designed to develop graduate skills in critical prose writing, with an emphasis on academic argumentation, and a review of bibliographic methods (MLA, CMS). Students taking this course must be prepared for a high level of participation and interaction in class. (I) '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981maenglish

122EM0610
Greek Lyrics
Lecture – 3hr/3cr. Vasileios Vagios

Traditional approaches to Ancient Greek Lyric poetry tend to define it as a genre in opposition to tragedy (poetry of social relations), and epic (poetry of cosmic relations), utilize the results of modern research in Greek Lyric poetry to argue that it was as communal as tragedy and epic, differing from them not in character but in mode. (I) '08-1
Prerequisite: n/a
URL: n/a

122EM2810
Pre-Raphaelite Poetry and Art
Seminar – 3hr/3cr. Ya-Feng Wu
Literary and visual works of the Pre-Raphaelite school, words and images in the larger framework of social, political, gender issues. G. D. Rossetti, Christina Rossetti, Swinburne, Lord Tennyson, John Everett Millais, Lord Leighton, John Waterhouse, etc. (II) '08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972Pre_Raphaelite

122 M3460
Visual Culture and Textual Politics in Late Medieval England
Seminar – 3hr/3cr. Ming-Tsang Yang

Visuality and textuality, medieval and modern, fourteenth-century English literature and the Middle Ages, textuality, visuality, discourses about language and vision, manuscript culture, vernacular translation, intellectual backgrounds, hermeneutical agency, institutional power and its resistance. (II) '07-2, '08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972medievalV_T

122EM5160
Blake's Oriental Texts and Images
Seminar – 1hr/1cr. Ya-Feng Wu

With the expansion of the British Empire and its establishment of overseas colonies since the Geographical Discovery, oriental art, literature, and religion were introduced to the West and gradually evolved into the study of Orientalism. Under such framework, Blake incorporated some oriental, especially Indian (i.e. Hinduism and Buddhism), philosophy and cosmology into his system of prophetic poems. (I) '09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981_Blake

122EM5560
Victorian Novels and Material Culture
Seminar – 3hr/3cr. Chi-She Li

This seminar offers a survey of high Victorian fiction and in so doing also explores complex socio-historical issues of material culture textualized in novels. We will discuss the Victorian novel within a time of unprecedented material accumulations and, in particular,

examine how novels sit between the reproduction of material culture and the reshaping of it. (I)(II) '07-2, '09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981novel

122EM5590
Postcolonial Theory and Its Discontents
Seminar – 3hr/3cr. Li-Chun Hsiao

There have been theoretical debates over the parameters, definition(s), methodologies or epistemological grounds, speaking positions, the locality, etc. of the postcolonial. This course will, then, situate postcolonial studies or, more specifically, postcolonial theory, in a series of critical debates, a framework of theoretical engagements not limited to literary studies, but across the humanities. (I) '09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981postcolonial

122EM5600
Sophocles' Antigone
Seminar – 3hr/3cr. Vasileios Vagios

Sophocles' Antigone is one of the most widely studied, taught, performed and adapted ancient Greek tragedy in the modern world. In this course we will try to recover the meaning of the play for its original audience. To do so we will examine fundamental issues of classical Athenian society (like the representation of Thebes as a negative model of Athens; funeral, religious and wedding rituals; and the political ideology of Athenian Democracy). (I) '09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981antigone

122EM5610
Shakespeare, Text and Memory
Seminar – 3hr/3cr. Vivienne Ruth Westbrook

This course explores Shakespeare's engagement with and relationship to textual and social 'memory'. Through a multi-disciplinary perspective that incorporates bibliography, historiography and cognitive and social science, it will examine the relationship between the author, text (literary and historical) and society. (I) '09-1

Prerequisite: n/a
122EM5620
Topics in Shakespeare: Intercultural Approaches
Seminar – 3hr/3cr. Bi-Gi Beatrice Lei
(I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981shakespeare

122EM5630
Theatre, Nationhood, and Globalization in Ireland
Seminar – 3hr/3cr. Wei-Hung Kao
This course aims to explore the relationship between theatre and national identity in Ireland from the early twentieth century to the present day, tracing the history and development of Irish theatre where tradition and experiment never cease to contradict, not necessarily counteract, each other. (I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981IrishTheatre

122EU2580
Lysias, Speech 12
Lecture – 2hr/2cr. Vasileios Vagios
Lysias’ masterpiece and the prosecution of Eratosthenes for the execution of Lysias’ brother during the undemocratic regime of the Thirty Tyrants after the restoration of democracy in Athens. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972medievalVT

123EM0781
The Historical Literature in English (I)
Seminar – 2hr/2cr. Chiao - Mei Liu
We will focus on advanced reading skill in historography through two recent classics of cultural history. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981historiography

123EU7620
Paris: The City and The Arts
Lecture/Discussion – 3hr/3cr. Chiao - Mei Liu
(I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Pariscityarts

124EM2240
Kant's Groundwork of the Metaphysics of Morals
Lecture – 2hr/2cr. Van Doan Tran
Help graduate students to grasp the moral philosophy of Kant by having a full understanding of Kant’s most important work on morals: The Groundwork of the Metaphysics of Morals. Each participant will be trained so that he or she could read with confidence and understand the original text (German and English) written by Kant himself. (I) ’08-1
Prerequisite: n/a
URL: n/a

124EM2280
Kant's Critique of Pure Reason
Lecture/Discussion – 3hr/3cr. Christian Helmut Wenzel
This course is an introduction to Kant's first Critique, the Critique of Pure Reason. It will be a close reading of the text. If there is enough interest, it will be continued in the following semester, probably with an emphasis on the problem of free will. We will use the good old Kemp Smith translation, which should be easily available in Taiwan. Also the translations by Pluhar and Guyer-Wood are useful, especially for comparisons. (I) ’09-1
Prerequisite: n/a
URL: n/a

124EM2920
The Concept of Existence
Seminar – 3hr/3cr. Chin Mu Yang
Unit 1 The Problem of Universals. Unit 2 Criteria for What There Is. Unit 3 Existence, Predication and Identity. (II) ’08-2
Prerequisite: n/a
URL: n/a
124EM2930
Theories of Reference
Lecture/Discussion – 3hr/3cr. Chin Mu Yang

Unit 1 The distinction between sense and reference of names. Unit 2 Theory of descriptions. Unit 3 The new theory of reference. Unit 4 Demonstrative. (I) ’08-1

Prerequisite: n/a
URL: n/a

124EM2960
Theories of Truth
Lecture – 3hr/3cr. Chin Mu Yang

Unit 1 Semantic conception of truth. Unit 2 Redundancy theory of truth/ Quine’s disquotational account of truth and semantic ascent. Unit 3 Truth and the liar paradox. Unit 4 The Anti-realist Challenge and Davidson’s program (I) ’08-1

Prerequisite: n/a
URL: n/a

124EM2980
Elementary Model Theory
Lecture – 3hr/3cr. Chin Mu Yang

Model theory is in essence a branch of mathematical logic, which deals with, roughly speaking, the relationship between the formal language in use (in particular, suitable for a formal logical system, or a mathematical theory) and models (structures) which satisfy sets of sentences of the language in use. (I) ’08-1

Prerequisite: n/a
URL: n/a

124EM3501
The Aesthetics Theory of Neo-Marxism: Lukacs and Adorno (1)
Seminar – 2hr/2cr. Van Doan Tran

For the Marxists, aesthetics, ever since Plato, is closely connected with politics. Thus, the critique of politics must begin with the critique of arts, and the restoration of a just society can be possible only if a rediscovery of aesthetics in the people or the absolute class. Georg Lukacs’ Theory of Novel (1911) explores the Marxist critique of arts as the ideology of the oppressor-class, and tries to rediscover the roots of arts (novel)ij the class consciousness. (I) ’09-1

Prerequisite: n/a
URL: n/a

124EM4260
Non-Classical Logic
Lecture – 3hr/3cr. Chin Mu Yang

Section I: Second-Order Logic. Section II: Three/Many valued Logic. Section III: Free logic. Section IV: Intuitionistic logic. Section V: Modal Logic. (II) ’08-2

Prerequisite: n/a
URL: n/a

124EM4270
Hilary Putnam on Meaning
Seminar – 3hr/3cr. Christian Helmut Wenzel

Twenty Years of Reflection on Hilary Putnam’s “The Meaning of ‘Meaning’”, Natural kinds and philosophy of language, Mental content and mental causation, Self-knowledge (II) ’08-2

Prerequisite: n/a
URL: n/a

124EM4290
“Twin Earth Chronicles ” and Tyler Burge
Seminar – 3hr/3cr. Christian Helmut Wenzel

We will read the Twin Earth Chronicles on Putnam’s article “The Meaning of ‘Meaning’”. In particular we will concentrate on Tyler Burge and his anti-individualism. (I) ’09-1

Prerequisite: n/a
URL: n/a

126EU1260
Evaluation of Library Operation
Lecture – 3hr/3cr. Muh-Chyun Tang

Use of data for planning and decision making purpose: evaluation of collection, applied bibliometrics, availability analysis, usability test and online information retrieval evaluation. Methods surveyed include circulation and log analyses, experimental design, protocol analysis,
focus group and survey. (II) ‘07-2, ‘08-2
Prerequisite: n/a
URL: http://www.lis.ntu.edu.tw/~mctang/courses/evaluation/index.htm

129EU1110
Seminar on Shakespeare’s Soliloquies 3
Lecture/Discussion – 2hr/2cr. Ching-Hsi Perng
1) the role soliloquy plays in Shakespeare’s drama; 2) perform the soliloquy by acting and recitation. (II) ‘08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972soliloquy

129EU1130
Ancient Greek and Roman Drama
Lecture – 3hr/3cr. Neil Bernstein
This course introduces: a) the performance conventions of the ancient Greek and Roman theater; b) texts of five of the major Greek and Roman dramatists; c) major issues in current scholarship on Greek and Roman drama. (I) ’08-1
Prerequisite: n/a
URL: n/a

129EU1140
Classical Traditions in Contemporary Drama, Novel, and Film
Lecture – 3hr/3cr. Neil Bernstein
This course introduces: a) major issues in the contemporary performance of Greek tragedy; b) texts and films by contemporary Anglophone artists working in the Western classical tradition; c) major issues in current scholarship on the contemporary reception of ancient epic and drama. (I) ’08-1
Prerequisite: n/a
URL: n/a

129EU1170
Drama & Democracy in Classical Athens
Lecture – 3hr/3cr. Neil Bernstein
Texts of three of the major Athenian dramatists, the social, historical, and political contexts in which these dramas were produced, major issues in current scholarship on ancient Greek drama and democracy. (II) ‘08-2
Prerequisite: n/a
URL: n/a

129EU1180
Hellenistic and Roman Drama
Lecture – 3hr/3cr. Neil Bernstein
Performance conventions of the ancient Hellenistic and Roman theater, Texts of four of the major Hellenistic and Roman dramatists, Major issues in current scholarship on Hellenistic and Roman drama. (II) ’08-2
Prerequisite: n/a
URL: n/a

141EM1280
Asian Maritime History and Archaeology
Lecture – 3hr/3cr. Takashi Sakai
The Asian maritime history through exchange of material cultures among of much ethnicity in whole Asian sea world. (II) ’08-2
Prerequisite: Understand basic geographical knowledge of Asian sea area.
URL: n/a

141EM1300
World Cultural Heritage in South & Southeast Asia
Seminar – 3hr/3cr. Takashi Sakai
Objective: understanding the asian cultures, mainly south and southeast asia, through the introduction of the world cultural heritage (wch) inscribed in unesco. Although the system for the inscription of wch is based on european thinking to preservation of cultural heritage, undoubtedly it is the easiest way to know different cultures in asia. (I) ’09-1
Prerequisite: n/a
URL: n/a
142ED0150
Pro-Seminar I: Computation Linguistics
Seminar – 3hr/3cr. Keh Jiann Chen

This course offers introductory lectures on the speech and natural language processing. The major topics include: 1) Regular expression and finite automata 2) Part-of-speech tagging and language modeling 3) Phonetics and computational phonology 4) Speech synthesis and speech recognition 5) Context-free grammars and sentence parsing 6) Lexical semantics and semantic processing 7) Information retrieval 8) Machine translation 9) Machine learning (I) ‘08-1, ‘09-1
Prerequisite: n/a
URL: n/a

142EM0800
Independent Study in Phonetics
Seminar – 3hr/3cr. Yee-Jean Janice Fon

(I) ‘08-1,’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981phonseminar

142EM0850
Prosodic System
Lecture – 3hr/3cr. Yee-Jean Janice Fon

Intonational system of English and Japanese, and Chinese languages. (II) ‘08-2
Prerequisite: n/a
URL: http://foneticslab.blogspot.com/search/label/About%20me

142EM0910
Topics in The History of Pacific Languages
Lecture – 3hr/3cr. Malcolm Davi D Ross

(I) ‘08-1
Prerequisite: n/a
URL: http://homepage.ntu.edu.tw/~gilntu/index1c.htm

142EU0610
Speech and Technology
Lecture – 3hr/3cr. Yee-Jean Janice Fon

1. The concept, and the overall type and token frequency in a spoken speech corpus. 2. the articulatory/acoustic properties of the components. 3. Manipulate the components via modern speech technology in order to perform perception tests. 4. How these elements interact with prosodic factors in a sentential context. (II) ‘08-2
Prerequisite: n/a
URL: http://foneticslab.blogspot.com/search/label/About%20me
144EM0110
Pro-Seminar on Musicology (II)
Seminar – 3hr/3cr. Chen Ren-Yan
This course offers an introduction to some of the fundamental principles and methodologies of research in historical musicology. Among the topics covered are editing, historiography, and the “new” musicology. (II) ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972musicology

144EM0940
Musicological Research Seminar (IV)
Seminar – 3hr/3cr. Chen Ren-Yan
(II) ’08-2
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

144EU0520
Music Sociology
Seminar – 3hr/3cr. Chen Ren-Yan
This course explores music and its interactions with human society. We shall consider the ways in which music not only reflects social structures, identities, and ideologies, but actively helps to construct them. (II) ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972mussoc

144EU0960
Japanese and Korean Musical Cultures from Their Perspectives
Lecture – 3hr/3cr. Yamauchi Fumitaka
This course explores important literature on Japanese and Korean musical cultures written in the Japanese and Korean languages with supplementary readings in English and other available languages. More emphasis will be put on contemporary popular music styles and scenes in the two countries. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981jk_perspectives

144EU0980
Introduction to The History of Japanese and Korean Pop Songs
Lecture – 3hr/3cr. Yamauchi Fumitaka
An introductory course on the history of Japanese and Korean popular songs since 1945. It focuses more on Japanese history, but it will also explore cultural exchanges between the countries and related issues as a step toward further discussion about Taiwanese history in a comparative perspective. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Pop+songs+J_K
**College of Science (58)**

**Contact Info:**
Department office (cos@ntu.edu.tw)

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**222ED1740**
Theory of Solid (I)
Lecture – 3hr/3cr. Ying-Jer Kao
Condensed matter physics studies systems with a large number of degrees of freedoms. In this course, we will cover the theoretical framework for understanding the physics in the condensed matter systems. (I) ‘09-1
Prerequisite: Knowledge of Quantum Mechanics, Statistical Mechanics, and elementary Solid State Physics.
URL: http://ceiba.ntu.edu.tw/981solid

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**222ED2920**
Special Topics in Manybody Physics
Lecture – 3hr/3cr. Ying-Jer Kao
Introduce recent developments in condensed matter. (II) ‘08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972manybody

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**222ED3160**
Introduction to Cuda Parallel Programming
Lecture – 2hr/2cr. Ting-Wai Chiu
Introduce the compute unified device architecture (cuda) parallel programming model, and its applications in science and engineering. Topics: high performance computing with cuda; cuda programming model, cuda application programming interface; cuda toolkit; parallel threads and memory hardware; floating point precisions; conjugate gradient with mixed precision, optimizing cuda. case study. (II) ‘08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972CUDA

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**222ED5010**
Seminar on Advanced Special Topics (I) (TIGP)
Discussion – 2hr/1cr. Faculty Members of the Nano Program
Each week, we will invite two to three faculty members to introduce their research. Students have to attend the class and ask questions. (II) ‘07-1, ‘08-1, ‘09-1
Prerequisite: n/a
URL: n/a

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**222ED5030**
Seminar on Advanced Special Topics (II) (TIGP)
Discussion – 2hr/1cr. Faculty Members of the Nano Program
Each week, we will invite two to three faculty members to introduce their research. Students have to attend the class and ask questions. (II) ‘07-2, ‘08-2
Prerequisite: n/a
URL: n/a

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**222ED5051**
Nano Science and Technology-an Overview (1) (TIGP)
Lecture – 3hr/3cr.
1. Introduction to physics of solid state
2. Method of measuring properties
3. Properties of individual nanoparticles
4. Carbon nanostructures
5. Buck nanostructured materials
6. Nanostructured ferromagnetism (I) ‘08-1, ‘09-1
Prerequisite: n/a
URL: n/a
222ED5052
Nano Science and Technology-An Overview (2) (TIGP)
Lecture – 3hr/3cr.
The special topics focus on our invited speakers’ experiences from their researches for years to lead students being interested in, curious about, and understanding more of the latest technology and up-to-date information in Nano-scaled science. (II) ‘07-2, ’08-2
Prerequisite: n/a
URL: n/a

222ED5061
Quantum Mechanics (1) (TIGP)
Lecture – 3hr/3cr. Ching Teh Li
The course is intended to give the students a basic training in quantum mechanics. In the first semester we learned the necessary mathematical tools, developed the subject from the postulates of quantum mechanics, and addressed the indispensable preliminaries. In this coming second semester of the course, the emphasis of the course will be on the second half of the following textbook. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

222ED5062
Quantum Mechanics (2) (TIGP)
Lecture – 3hr/3cr. Ching-Teh Li
A basic training in quantum mechanics: First semester: learn the necessary mathematical tools, developed the subject from the postulates of quantum mechanics, and addressed the indispensable preliminaries. Second semester: the emphasis of the course will be on the second half of the textbook. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: n/a

222ED5100
Computational Materials Science (TIGP)
Lecture – 3hr/3cr. Chao-Ping Hsu, Horng-Tay Jeng
The fundamental theories behind modern quantum chemistry computation. Using most quantum chemistry packages to obtained desired information, know problems that computational quantum chemistry can offer. (II) ’08-2
Prerequisite: n/a
URL: n/a

222ED5120
Seminar on Advanced Special Topics (III) (TIGP)
Discussion – 2hr/1cr. Faculty Members of the Nano Program
Each week, we will invite two to three faculty members to introduce their research. Students have to attend the class and ask questions. (II) ’07-1, ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

222ED5130
Seminar on Advanced Special Topics (IV) (TIGP)
Discussion – 2hr/1cr. Faculty Members of the Nano Program
We will invite two to three faculties’ members to introduce their research every week. Students have to attend the class and ask questions. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: n/a

222ED5170
Fabrication and Analysis of Nanostructures (TIGP)
Lecture – 3hr/3cr.
The course emphasizes primarily on the case studies and team projects rather than the lectures given in the class. Students are grouped into several teams to work on projects proposed by themselves in the midterm examination. Grades are given based primarily on the performance of a team in the final report and individual contribution to the team work. (II) ’07-2
Prerequisite: n/a
URL: n/a
222ED5180
Molecular Spectroscopy (TIGP)
Lecture – 3hr/3cr. Wun-Shain Fan, Chi-Kung Ni, Wen-Bih Tzeng, Pei-Hsi Tsao

Part 2: Review of group theory 1. point group  
Rotational spectroscopy Vibrational spectroscopy Electronic spectroscopy Introduction (a) Linear, Symmetric Rotor, Spherical Rotor, and Asymmetric Rotor Molecules, (b) Rotational Infrared, Millimeter Wave, and Microwave Spectra, (c) Rotational Raman Spectroscopy, (d) Structure Determination from Rotational Constants (I) ’08-1
Prerequisite: n/a
URL: n/a

222ED5240
Classical Electrodynamics (II)
Lecture – 3hr/3cr. Xiao Gang He

This is Classic Electrodynamics II for International Graduate Program students. The materials to be covered are included in the book: Classic Electrodynamics by Jackson. It is a continuation of Classic Electrodynamics I. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: n/a

222ED5250
Statistical Physics (I)
Lecture – 3hr/3cr.

Statistical characteristics of wave functions. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

222ED5260
Modern Experimental Techniques
Lecture – 3hr/3cr.

Prerequisite: n/a
URL: n/a

222ED5290
Introduction to Nano-Biophotonics
Lecture – 3hr/3cr.

Review the basics and recent developments of nanobiophotonics, an emerging field which is cross-disciplinary among nanoscience and nanotechnology, biology, and photonics. (I) ’08-1
**222ED5320**  
**Statistical Physics (II)**  
Lecture – 3hr/3cr.


Prerequisite: n/a  
URL: n/a

**223ED1410**  
**Discussion in Advanced Inorganic Chemistry (I)**  
Lecture – 3hr/3cr.  
Yu Wang

Outline: I. Symmetry & Bonding II. Transition Metal Chemistry III. Main Group Chemistry (I)  

‘09-1

Prerequisite: 1. General Chemistry 2. Inorganic Chemistry, Undergraduate Level  
URL: https://ceiba.ntu.edu.tw/971advinorgchem01

**223ED1660**  
**Discussion in Advanced Chemical Biology (I)**  
Lecture – 4hr/4cr. Richard-Ping Cheng

This course provides an overview for chemical biology with emphasis on the structure and function of biological molecules and spectroscopic techniques for investigating biomolecular systems.  

‘09-1

Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981advchembiology

**223ED9110**  
**Advanced Organic Chemistry (I)**  
(TIGP)

Lecture – 3hr/3cr.

This course will introduce the basic concepts and models used to understand the structure and property of organic compounds. The application of these concepts to rationalize various types of organic reactions will be illustrated.  

(I) ’08-1, ’09-1

Prerequisite: Organic chemistry  
URL: http://www.phys.sinica.edu.tw/TIGP-NANO/course.htm

**223ED9130**  
**Advanced Inorganic Chemistry (I)**  
(TIGP)

Lecture – 3hr/3cr.

Outline: I. Symmetry & Bonding II. Transition Metal Chemistry III. Main Group Chemistry (I)  

‘09-1

Prerequisite: 1. General Chemistry 2. Inorganic Chemistry, Undergraduate Level  
URL: http://www.phys.sinica.edu.tw/TIGP-NANO/course.htm

**223ED9160**  
**Advanced Analytical Chemistry (II)**  
(TIGP)

Lecture – 3hr/3cr.

This course is intended for a broad audience including students and future scientists in materials science, chemistry, bio-medical engineering and Nanotechnology. The course aims to develop understanding for principles, instrumentation and applications for characterization instrumentations of materials, devices and biological molecules.  

(II) ’07-2

Prerequisite: Analytical Chemistry  
URL: http://www.phys.sinica.edu.tw/TIGP-NANO/course.htm
223ED9170  
**Advanced Physical Chemistry (I)**  
(TIGP)  
Lecture – 3hr/3cr.  
(I) ’08-1,’09-1  
Prerequisite: Physical Chemistry  
URL:  
http://www.phys.sinica.edu.tw/TIGP-NANO/223ed9170

223ED9180  
**Advanced Physical Chemistry (II)**  
(TIGP)  
Lecture – 3hr/3cr.  
Three laws of thermodynamics will be discussed, which will be followed by showing their applications to treat properties of gases, liquids and solids, and chemical reactions. Thermodynamics of ideal solutions and real solutions will be presented. (II) ’08-2  
Prerequisite: n/a  
URL:  
http://www.phys.sinica.edu.tw/TIGP-NANO/223ed9180

223ED9190  
**Advanced Physical Chemistry (III)**  
(TIGP)  
Lecture – 3hr/3cr.  
Huan-Cheng Chang  
Prerequisite: Physical Chemistry  
URL:  
http://www.phys.sinica.edu.tw/TIGP-NANO/223ed9190

223ED9210  
**Seminar (TIGP)**  
Lecture – 2hr/1cr.  
Invite one to two faculty members to introduce their research each week. Students have to attend the class and ask questions. (I) (II) ’08-1,’08-2,’09-1,’09-2  
Prerequisite: n/a  
URL:  
http://www.phys.sinica.edu.tw/TIGP-NANO/223ed9210

223ED9220  
**Research Training (TIGP)**  
Lecture – 2hr/1cr.  
(I) (II) ’08-1,’08-2,’09-1,’09-2  
Prerequisite: n/a  
URL:  
http://www.phys.sinica.edu.tw/TIGP-NANO/223ed9220

223EM1410  
**Advanced Inorganic Chemistry (I)**  
Lecture – 3hr/3cr.  
Lin-Kang Liu  
I. Symmetry & Bonding II. Transition Metal Chemistry III. Main Group Chemistry (I) ’08-1,’09-1  
Prerequisite: 1. General Chemistry 2. Inorganic Chemistry, Undergraduate Level  
URL:  
https://ceiba.ntu.edu.tw/971advinorgchem01

223EM1660  
**Advanced Chemical Biology (I)**  
Lecture – 4hr/4cr.  
Richard-Ping Cheng  
This course provides an overview for chemical biology with emphasis on the structure and function of biological molecules and spectroscopic techniques for investigating biomolecular systems. (I) ’09-1  
Prerequisite: n/a  
URL:  
http://ceiba.ntu.edu.tw/981advchembiology

223EU1420  
**Porphyrins and Related Chemistry**  
Lecture – 3hr/3cr.  
Chi-Kwong Chang  
This course surveys the chemistry of
porphyrin type macrocyclic compounds and the various roles they play in biological processes. Emphasis will be directed at organic syntheses of the ligand, physico-chemical properties of the iron complexes, and the bioinorganic models of three major classes of hemoproteins: myoglobin, cytochrome P450, and cytochrome c oxidase. The topics selected are interdisciplinary in nature. (II) '08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972porphyrins

223EU2640
Dynamics in Systems Biology
Lecture – 3hr/3cr. Chao-Ping Hsu
The dynamical aspect of these studies can often be included in a model to describe and to predict the behavior of a complex biological system. The construction, evolution and prediction of these biological models are closely related to a branch in mathematics – nonlinear dynamics. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971dsb

223EU2680
Chemical Biology of Proteins
Lecture – 2hr/2cr. Sunney I. Chan
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971proteins

223EU9110
Advanced Chemistry of Materials (TIGP)
Lecture – 3hr/3cr. Shie Ming Peng
(II) '08-2
Prerequisite: n/a
URL: http://www.phys.sinica.edu.tw/TIGP-NANO/course.htm

223EU9240
Introduction to Biophysical Chemistry (TIGP)
Lecture – 2hr/2cr. Sunney I. Chan
Emphasizes transport phenomena, methods for the separation and characterization of macromolecules, treatment of the interaction of light with matter, methods of identification of macromolecules, etc. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971proteins

223EU9250
Introduction to Biophysical Chemistry (TIGP)
Lecture – 3hr/3cr. Sunney I. Chan
Emphasizes transport phenomena, methods for the separation and characterization of macromolecules, treatment of the interaction of light with matter, methods of identification of macromolecules, methods of structural determination of macromolecules. The concepts and mathematical manipulations will be illustrated with biochemical and biophysical applications. (I) '09-1
Prerequisite: n/a
URL: http://proj1.sinica.edu.tw/~tigpcbmb/courses.htm

224EM2440
Geo-Analytical Chemistry
Lecture / Discussion – 2hr/2cr. Chuan-Chou Shen
For graduate students in the Dept. of Geosciences, without an extensive background in chemistry. It emphasizes both theoretical and practical aspects of analytical techniques for geochemical research. Modern instrumental techniques and experimental methods will be included. Paper reading, discussion and presentation will also play essential roles in class. (I) '08-1, '09-1
224EU0190
Analysis of Geochemical Data
Lecture / Discussion – 2hr/2cr.
(I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971analytical_chem

224EU1800
Geologic Hazard Assessment
Lecture /Practical – /2cr. Yue-Gau Che
(I) ’08-1,’09-1
Prerequisite: n/a
URL: n/a

224EU2320
Accelerator Mass Spectrometry for The Geosciences
Lecture/Discussion – 2hr/2cr. Chuan-Chou Shen
The course is divided into three parts. The first part of the course will discuss the theoretical design, implementation, and refinement of AMS instruments. The second part of the course will focus on significant geologic findings made possible by AMS technology. The third part of the course will discuss current challenges, latest findings, and future directions in the field. Paper reading and discussion will play essential roles in class. (II) ’07-2
Prerequisite: n/a
URL: n/a

224EU2330
Mineral Deposits
Lecture /Practical – /2cr. Cheng-Hong Chen
(I) ’08-1
Prerequisite: n/a
URL: n/a

Graduate Seminar on University Teaching
Lecture /Discussion –3hr/3cr. Julius Arthur Woodward
This seminar is designed to examine issues involved in effective university teaching. Two premises of the course are: (1) effective teaching is a skill that can be learned, and not something a person is born with, or without; and, (2) there are many ways to be an effective teacher -- not a single way -- and good teachers select effective techniques that fit their personal styles, values, and culture. (II) ’07-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962college_teaching

227EM8800
Graduate Seminar on Scientific Writing
Discussion/ Laboratory – 2hr/2cr. Julius Arthur Woodward
(1) In each two-hour lesson, participants will write brief essays during the first hour on some assigned topic using computers in the computer lab; (2) A sample of essays will be edited by the instructor using “track changes”; (3) Participants will “accept changes” and keep three versions (a) the original unedited version, (b) the edited version with tracked changes, and (c) the clean version with the changes accepted; (4) discuss questions, comments, or other suggestions about the writing samples. (I) (II) ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971sci_writing

228ED0020
Special Topics in Contemporary Geographic Thoughts
Lecture – 3hr/3cr. Jack Williams
Ph.D. students in Geography at NTU particularly need assistance in strengthening their skills in writing dissertations, especially in understanding current trends and methodology in the field of geography (and particularly in each student’s individual area of specialization). They also need improvement in their English language skills (both speaking and written). This course is
designed to address these weaknesses/objectives. It will focus primarily on enrolled Ph.D. students in both human and physical geography, but advanced masters students intending to study for the Ph.D. will also be allowed to enroll (with permission). A small class size environment will make it possible to give intensive one-on-one advisement and attention to each student, in and out of class time, plus greater opportunity for in-class interaction among the students and instructor. (I) ’09-1
Prerequisite: n/a
URL: n/a

228ED0950
Dissertation Research and Writing
Lecture / Discussion – 3hr/3cr. Keng-Tsung Chang
Covers the basics of scientific writing. Use Michael Alley’s popular book on scientific writing for discussions. Examines the organization and writing of select articles from indexed journals that correspond to students’ research interest. Let the student prepare a manuscript and submit it to an indexed journal. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971geog_d095

228EM5750
Special Topics in Exploring Taiwan
Lecture – 3hr/3cr. Lan Hung Chiang
To face the needs of international students at National Taiwan University, the College of Science helps to build an international studies course “Exploring Taiwan – Geographical Environment and Resources” as one of the courses to be taught in English at NTU. This course brings in instructors who are the best in their fields of research, and includes atmospheric science, geology, marine science, and physical and social geography. It will give foreign students a good background in this wide range of disciplines, instilling a greater understanding of Taiwan and enabling them to take advanced courses taught in Chinese, or partake in research in future. Offered for the first time, both foreign and local students can take the course to fulfill the requirement of the international studies program. (I) ’09-1
Prerequisite: n/a
URL: n/a

228EM7320
Globalization and Development Studies
Lecture /Discussion – 3hr/3cr. Shiuh-Shen Chien
The course instructor will give a brief presentation on the each topic every week (around 1 hour), following by students’ oral presentation to their thoughts on assigned readings. All students are requested to write up one A4 page (800 words in English, or for the first few weeks, 1,200 words in Chinese is “compromised” to accept). Students who are NOT in charge of the week need to collect one piece of news about the course topic with different country focus. Students who are the chair of the week need to make their oral presentation by compiling everyone’s written thoughts as well as submitted news reports. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981globalization602

229EM8010
Atmospheric Chemistry and Its Applications
Lecture /Discussion – 3hr/3cr.
The focus of this course is to apply atmospheric chemistry to the understanding of important phenomena of the atmosphere, particularly those related to environmental changes. (II) ’07-2
Prerequisite: n/a
URL: n/a

229EU5330
Scientific English and Basic Writing
Lecture – 2hr/2cr. D. Ludwig
The objective of this course is to develop English skills for writing experimental research reports. (I)(II) ’07-2,’08-1
Prerequisite: n/a
URL: n/a
241EM3630
Ecological Modeling Seminar
Discussion – 2hr/2cr. Chih-Hao Hsieh
Discuss the application of mathematical modeling and computer programming techniques to investigate ecological questions, statistical analyses for identifying ecological patterns. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://homepage.ntu.edu.tw/~complex/seminar.html

241EM3640
Ecological Modeling Seminar (II)
Lecture – 2hr/2cr. Chih-Hao Hsieh
This is a course intended for students with basic knowledge of ecology, statistics, differential equations, and computer programming techniques and had some experience on modeling. We will discuss the application of mathematical modeling and computer programming techniques to investigate ecological questions. We will also discuss statistical analyses for identifying ecological patterns. Students will select a subject base on his/her own interest and present the progress of the chosen topic. The class is mainly in the form of discussion. (II) ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972ecol_theory

241EU1910
Biological Oceanography
Lecture/Discussion – 3hr/3cr. Chih-Hao Hsieh
An overview of biological ocean science and to provide basic information and training for graduate research. Range from physical effects on the biology to biological effects on biogeochemical cycling; the spatial scale will range from individual organisms to ecosystem; the organism will range from virus to whales. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971BO

241EU1920
Computer Intensive Statistics in Ecology
Lecture/Laboratory – 3hr/3cr. Chih-Hao Hsieh
An advanced course intended for senior undergraduate and graduate students with knowledge of basic statistics including random variables, analysis of variance, regression analysis, and rank-based non-parametric statistics. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972computer_stat

241EU1940
Basic in Theoretical Ecology
Lecture/Laboratory – 3hr/3cr. Takeshi Miki
For senior undergraduate and graduate students with knowledge of basic biology. Basic knowledge on population dynamics is preferred. Basic but important mathematical methods for analyzing evolutionary dynamics in biological systems are offered. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971matheco

241EU1950
Basic in Theoretical Evolutionary Ecology
Lecture/Laboratory – 2hr/2cr. Takeshi Miki
Basic course intended for senior undergraduate and graduate students with knowledge of basic biology. Basic knowledge on population dynamics is preferred. Basic but important mathematical methods for analyzing evolutionary dynamics in biological systems are offered. There will be dedicated time every week for students to do “paper-and-pencil” exercise. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972mathevo
College of Social Sciences (28)

Contact Info:
Department office (coss@ntu.edu.tw)

302 E24510
Political Economy of East Asia
Lecture – 2hr/2cr. Chen-Dang Tso
Looking at economic theory and the role of governments in the development of East Asia. First, review the principles of political economy as applied to the East Asian economies using Robert Wades' foundational text “Governing the Market.” Second, Use journal articles to look deeper into the issues surrounding East Asian political economy (I) ’08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971peea

302 E26910
Cross-Strait Relations
Lecture – 2hr/2cr. Cheng-Ming Chu
Trace the origins of China’s division from various perspectives and to conduct our analyses of the field based on historical approach. It is hoped that this approach can help lay a solid foundation for those who are interested in further exploration of the issue in the future. (II) ’07-2
Prerequisite: n/a
URL: n/a

302 E36310
History of International Relations
Lecture – 2hr/2cr. Hung-Dah Su
Focus on: 1. Basic knowledge of the historical facts of the international relations history. 2. Basic capacities to approach the international relations. 3. Basic capacities to find sources indispensable to the questions in the IRH. (I) ’07-1, ’08-1, ’09-1
Prerequisite: n/a
URL: http://politics.ntu.edu.tw/blog/index.php?blogId=26

302 E36810
American Foreign Policy
Seminar – 2hr/2cr. Sxue-Chin Hsu
This course talks about the American foreign policy in the post cold war period. The international system in this period is different from that during the cold war period. As a result, the goal, the core value, the policy tool of American foreign policy are changing to a certain scale. This course helps students to figure those changes and the actual American foreign policy. (I) ’07-1, ’08-1, ’09-1
Prerequisite: n/a
URL: http://politics.soc.ntu.edu.tw/blog/index.php?blogId=44

302 E45100
International Organizations
Lecture – 2hr/2cr. Hung-Dah Su
Introducing the evolving nature of international organizations within the broader context of changing international relations. Emphasize on the idea of IO and the United Nations organizations in the fall semester and the WTO and Asia-Pacific
international organizations in the spring semester. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981IO

302E50500
Political Economy of Southeast Asia
Lecture – 2hr/2cr. Chen Dang Tso

The objective of this course is to introduce students to the basic principles of political economy through the study of examples in Southeast Asia. (II) ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972PESEA

303E2210
Microeconomics (I)
Lecture – 2hr/3cr. Tain Jy Chen

Go through the topics of the market, budget constraint, utility...... (I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/981microeconomics06

303E13111
Principle of Economics (with Recitation)
Lecture /Recitation – 5hr/4cr. Joseph Tao-Yi Wang

The Goal of this class is to introduce how economists think (without the math required for microeconomics), and, help you think like an economist! Specifically, we will see how economists observe real world phenomenon, build simplified models of reality, derive theories to provide policy advice, and test implications with empirical or experimental data. (I)(II) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981principles_micro4

303 E22110
Macroeconomics (I)
Lecture – 3hr/3cr. Wing-Leong Teo

Take a close look at macroeconomic concepts, including gross domestic product (GDP), unemployment and inflation, as well as try to understand why some countries are so much richer than other countries from the perspectives of economics. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971macro_teo

303E22120
Macroeconomics (II)
Lecture/Discussion – 2hr/3cr. Wing-Leong Teo

Familiarize students with the tools of macroeconomics, focus on short-run fluctuations, and examine the pros and cons of various policies that a government can use to smooth short-run fluctuations in this semester. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/a8f03f/index.htm

303E47400
Trade Policy
Seminar – 2hr/2cr. Hong Hwang

This course is intended to provide students with basic analytical methods in trade and to help them keep abreast of current trade issues. It starts off by closely following textbook studies of trade theory, followed by a study of trade policies. After completing the relevant part of the textbook, I may select some articles for discussion, especially those on frontier issues such as strategic trade theory. (II) ’08-2
Prerequisite: Microeconomics
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_9723034740002.doc

303 E47500
International Finance
Lecture – 3hr/3cr. Wing-Leong Teo

Familiarize students with the important concepts and major theories of international finance. Focus on how open-economy variables, such as the exchange rates, international capital movement and
international trades affect economic performance and how economic policies should be designed, taking into consideration the complexities brought about by open-economy considerations. (I) (II) '07-2, '08-1, '08-2, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/00bbe2/index.htm

303E48110
Econometrics (I)
Lecture – 2hr/3cr. Sheng-Kai Chang
This course is a semester long course in introductory econometrics. Its objective is to provide students with basic statistical tools and concepts that will help them estimate economic models and do subsequent inference. (I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981303E48110

322EU3950
Seminar on Cross - Strait Relations
Lecture/Discussion – 2hr/2cr. Ya-Chung Chang
Introductory level; we wish to avoid the ideological debates in the Taiwanese society. 1. Trace the origins of the division of china. 2. Try to explore the cross-Taiwan strait relations from a historical perspective. Hoping this approach will lay a solid foundation for those who are interested in further study in the future. (I) (II) '07-1, '08-1, '09-1
Prerequisite: n/a
URL: n/a

323 EM1450
Microeconomic Theory (I)
Lecture – 2hr/2cr. Joseph Tao-Yi Wang
Train you to think like an economist. You are expected to learn the basic tools used by economists to analyze various questions that arise in the real world. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971micro_theory

323 EM1470
Macroeconomic Theory (I)
Lecture/ Discussion – 3hr/3cr. Wing-Leong Teo
An introduction to the methods and approaches in macroeconomics at the graduate level. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971Macro_Theory_1

323EM6140
Econometric Theory (I)
Lecture – 3hr/2cr. Sheng-Kai Chang
The intention of this course is to provide a foundation for applied research in economics. Econometric Theory (II) in the following semester will be more focused on time series analysis and its applications. (I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981M6140

323EU0220
Market and Economic Development of Taiwan (II)
Lecture – 2hr/2cr. Kelly Barton Olds
Examine Taiwan’s economic development from about 1860 to 1985: 1) exam Taiwan’s important crops (sugar, rice and tea) and how these affected Taiwan’s economic development from roughly 1860-1960; 2)look at the development of Taiwan’s natural resources, primarily camphor and gold; 3) consider Taiwan’s rise as a manufacturing power. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972marketeco2 ; http://homepage.ntu.edu.tw/~olds

323EU3700
The Indian Economy
Lecture – 2hr/2cr. Kelly Barton Old
Topics: India’s Information Technology (IT) industry, India’s Service Economy, India’s Informal Economy 4. India’s Education System, India’s Continuing Economic Reforms Indian Governance & Corruption,
India’s Future Economic Growth. (I)(II) ’07-2, ’08-2, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972indiaeco; http://homepage.ntu.edu.tw/~olds

323EU5120
The History of Economic Crises
Lecture/Seminar – 2hr/2cr. Kelly Barton Old

This course will examine both recent and past economic crises, both their causes and effects. The first eleven weeks of the course will examine a wide variety of crises, from the Mississippi Bubble to the present crisis. The last six weeks will focus on the Great Depression. The full tentative schedule is posted below. Class time will be split roughly equally between lectures and group presentations and discussions. Both lectures and presentations will be primarily based on papers published in economic journals. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981ecocrises

325EM0210
Seminar on Family Sociology
Seminar – 3hr/3cr. Jui Chung Li

The topic of this semester will focus on Family Change and Social Inequality. In this semester we are going to deal these issues below: “family Influence in Status Attainment”, “parental Investment and social inequality”, “who marries whom, when and why?”, “divorce and Adult well-being”, “divorce and child well-being”, “intergenerational transmission of family behaviors and inequality”, “methodology workshop”, “work and Family: Housework”, “work and family: childbearing, “work and family: family migration”, “recent family change and trends in social inequality”, “intergenerational relations and the dependent population”, “new families, no families?” “learning from non-traditional families.” (II) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

341EU8330
Seminar on China’s Economic Transition
Lecture – 2hr/2cr. Tep- Tia Tang

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972china_1

341EU8260
Special Topics in China’s Economic Development and Reform
Lecture – 2hr/2cr. D.P. Tang

Focus on China’s institutional structure of the economy, on the changing economic environment including the roles of planning and markets, on government economic strategy and policies, and on outcomes with respect to economic growth and income distribution. Including pattern of economic growth, rural and urban development, agriculture, industry, international trade and investment, financial development and macroeconomic management. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

341EU5100
Central Bank and Its Operation
Lecture/Seminar – 2hr/2cr. Fong Lin Chu

To let student have a genuine understanding about the central banking, monetary policy and their influences on both domestic and global economies. (I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_972325M0210.pdf
341EU8260
Special Topic in China’s Economic Development and Reform
Seminar – 2hr/2cr. Tep Tia Tang
This course will provide an overview of current research on economic development and reform in China. It focuses on the institutional structure of the economy, on the changing economic environment including the roles of planning and markets, on government economic strategy and policies, and on outcomes with respect to economic growth and income distribution. (I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_981341U8260.doc

341EU8770
Seminar on Economic Intergration: Theory and Practicen
Seminar – 2hr/2cr. Jenn Hwa Tu
This course aims to make students understand the theories of economic integration and its practice in the real world. The students should be able to evaluate the economic effects of free trade agreement (FTA), customs union and monetary union, after completing this course. (I) ’09-1
Prerequisite: Students should be equipped with the basic training of Economics
URL: http://ceiba.ntu.edu.tw/981ei

341EU8450
Seminar on Banking and Monetary Theory
Seminar – 2hr/2cr. Fong Lin Chu
An understanding of current banking and monetary theory in a capitalistic world. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_972341U8450.doc
College of Medicine (14)

Contact Info:
Department office (mcdean@ntu.edu.tw)

421ED9160
Medical Imaging Investigation
Lecture – 3hr/3cr. Wen-Chau Wu
Prerequisite: n/a
URL: n/a

421ED9180
Fast Magnetic Resonance Imaging Technique
Lecture – 3hr/3cr. Wen-Chau Wu
1. Parallel imaging 2. Echo-planar imaging 3. Fast spin-echo imaging 4. Steady-state imaging (I) '08-1
Prerequisite: n/a
URL: n/a

421ED9190
Magnetic Resonance Spectroscopy and Physiological Imaging
Lecture / Laboratory – 3hr/3cr. Wen-Chau Wu
Prerequisite: 1. Graduate standing or consent of instructor 2. Basic knowledge of MRI (signal formation, k-space, image contrast), physiology, and engineering mathematics (differential equation, matrix operation)
URL: n/a

421EM9290
Magnetic Resonance Imaging in Medicine
Lecture/Laboratory – 3hr/3cr. Wen-Chau Wu
Introductory course on magnetic resonance imaging (MRI) with a focus on its applications in medicine. Topics: MR signal source, Spatial encoding, Image contrast, Hardware, K-space, Fast scan, Image quality, MR angiography, Artifacts, Diffusion imaging, Perfusion imaging, MR spectroscopy, Bio-effects and safety, Clinical applications. (I) (II) '08-2, '09-1
Prerequisite: n/a
URL: n/a

422EM1110
Review of Orthodontic Treatment Results (I)
Discussion/Laboratory – 1hr/1cr. Chung-Chen Yao
Developing the skill of case presentation in English, evaluating the treatment result via cephalometric superimposition, exercising problem resolving ability in clinical setting. (I) '08-1, '09-1
Prerequisite: Clinical Orthodontic Practice (I)
URL: n/a

422EM1120
Review of Orthodontic Treatment Results (II)
Discussion/Laboratory – 1hr/1cr. Chung-Chen Yao
Develop the skill of case presentation in English, evaluating the treatment result via cephalometric superimposition, exercising problem resolving ability in clinical setting. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

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422EM1130  
Review of Orthodontic Treatment Results (III)  
Discussion/Laboratory – 1hr/1cr.  
Chung-Chen Yao  
Developing the skill of case presentation in English, evaluating the treatment result via cephalometric superimposition, exercising problem resolving ability in clinical setting. (I) ’08-1, ’09-1  
Prerequisite: Review Of Orthodontic Treatment Results ( I )  
URL: n/a

422EM1140  
Review of Orthodontic Treatment Results (IV)  
Discussion/Laboratory – 1hr/1cr.  
Chung-Chen Yao  
Develop the skill of case presentation in English, evaluating the treatment result via cephalometric superimposition, exercising problem resolving ability in clinical setting. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: n/a

424EU3000  
General Genetics  
Lecture – 2hr/2cr. Ya-Wen Chang  
Topics: the individual genetics (classical genetics), molecular genetics, populations of individuals (population and quantitative genetics), and the extension of clinical aspects of applications (molecular diagnosis and clinical genetics). (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972general_genetics

428EM1120  
Research Methodology in Physical Therapy  
Lecture/Laboratory – 2hr/2cr. Hua- Fang Liao  
Enhance each PT graduate student’s ability to do research design and understand the research process of physical therapy. Topics: Literature Review, Problem Identification and Hypotheses, Introduction to evidence-based practice, Study Design, Meta-analysis. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: n/a

428EM1200  
Laboratory for Advanced Assessment in Physical Therapy  
Laboratory – 2hr/1cr. Feng-Jeng Suh  
Introduce the theory of assessment, principles, psychometric properties of various clinical assessments of physical therapy including muscle testing, functional outcome assessment, infant motor development assessment, pulmonary function assessment, exercise testing assessment, range of motion assessment and assessment of sensation and pain. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: n/a

441ED1600  
Advanced Gastrointestinal Mucosal Immunophysiology  
Discussion – 2hr/2cr. Chia-Hui Yu  
Focus on critical discussion of scientific papers in the field of gastrointestinal mucosal immunophysiology. This course is
intended for further in-depth study of the gastrointestinal physiology and immunology. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

441EM2600
Gastrointestinal Mucosal Immunophysiology
Discussion – 2hr/2cr. Chia-Hui Yu

This content of the course will focus on critical discussion of scientific papers in the field of gastrointestinal mucosal immunophysiology. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a
College of Engineering (95)

Contact Info:
Ms. Yi-Ting Chen (irenechen@ntu.edu.tw)

501E10600
Engineering Graphics
Lecture – 3hr/2cr. Shih-Chung Kang

The major goal of this course is to help students develop proficient skills so that they can communicate with other professions by using graphical languages. Students will learn the fundamental concepts of visualization technologies applied for engineering purposes, through lectures, readings, laboratory, discussions, and projects. They will learn to use various software tools to illustrate a new structure, machine, and system on a paper and/or a computer screen to communicate with other members involved in the design or construction processes. Topics will include the fundamental background in engineering graphics, such as 2D and 3D CAD system, multi-view projections, sectional views, design and construction drawings, perspective, structural drawing, topographic drawings, and welding representations. Five software tools, including Autodesk, SketchUp, Blender, Paint.NET and Microsoft Movie Maker will be covered in this course. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971ce501

502E16000
Engineering Graphics
Lecture/ Laboratory – 4hr/2cr. Shana Smith

Integration of fundamental graphics, computer modeling, and engineering design. Applications of multiview drawings and dimensioning. Techniques for visualizing, analyzing, and communicating 3-D geometries. Application of the design process including written and oral reports. Freehand and computer methods in preparing engineering graphics. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971EG2008

502E21140
Dynamics
Lecture – 3hr/3cr. Yee-Pien Yang

Provide a fundamental knowledge of dynamics: kinematics and kinetics of particle, system of particles, and rigid bodies in planar and three-dimensional motion. VAMP (vector analysis and modeling procedure) is introduced to precisely describe linear and angular positions and torques for generating a set of equations of motion, without missing any terms. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972dynamicsyang

501E37800
Construction Management
Lecture/ Laboratory – 3hr/3cr. Luh-Maan Chang

Introduces a broad set of fundamental topics regarding management of constructor business. Helps understand the uniqueness of construction industry, evaluate construction management’s effectiveness, and apply modern management to planning and scheduling for construction projects. Students will run one entire project from planning through scheduling, and budgeting, both manually and on the computer. (I) '07-2, '08-1, '08-2, '09-1
Prerequisite: n/a

502E31000
Fluid Mechanics
Lecture – 3hr/3cr. Kuo-Long Pan

1) Basic properties of fluids 2) Fluids at rest–pressure and its effects 3) Kinematics of fluid motion 4) Fluids in motion–the Bernoulli equation 5) Flow analysis using control volumes 6) Flow analysis using differential
502E34210

Machine Design Theory
Lecture/ Laboratory – 3hr/3cr. Shana Smith

1) Principles of design and stress analysis
2) Design of mechanical drive
3) Design details and other machine elements
4) Team design project
5) Project presentation and competition

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971MachineDesign2

502E45100

Automatic Control
Lecture/ Laboratory – 3hr/3cr. Yee-Pien Yang

Introduction to feedback principles, control systems design, and system stability. Modeling of physical systems in engineering and other fields; transform methods; controller design using Nyquist, Bode, and root locus methods; compensation; computer-aided analysis and design. (I) ’08-1, ’09-1

Prerequisite: Engineering Mathematics A
URL: https://ceiba.ntu.edu.tw/971automaticcontrolya

504E43100

Process Control
Lecture – 3hr/3cr. Jeffrey Daniel Ward

This course will present an introduction to process dynamics and control. Students will learn how to construct dynamic models of process systems, how to analyze process dynamics using Laplace transforms and transfer functions, the characteristic responses of dynamic processes, and the design and implementation of feedback control. Students will also learn to use computer software to model process dynamics and control. (I) ’09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Control_Ward

504E44100

Process Design
Lecture – 4hr/3cr. Jeffrey Daniel Ward

This course will present an introduction to process design. Students will learn basic concepts in engineering economics, as well as principles of process synthesis and analysis. Students will also learn to use process simulation software. Working in groups, students will complete a process design project and will be evaluated based on written and oral presentation of their results. (I) ’09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Design_Ward

521EM1200

Structural Dynamics
Lecture – 3hr/3cr. R. Yaunchan Tan

This course presents methods for analyzing the responses developed in structure when it is subjected to an arbitrary dynamic loading. Emphasis is laid on the various step-by-step numerical methods and the powerful mode-superposition method. The fundamentals of spectrum analysis and its application in earthquake engineering are also covered to provide the student an insight into the benefit from dynamic analysis. (I) ’08-1, ’09-1

Prerequisite: n/a
URL: n/a

521EM1210

Methods of Finite Elements
Lecture – 3hr/3cr. Liang-Jeng Leu


(I) ’07-2, ’08-2
521EM1870  
Advanced Structural Theory  
Lecture – 3hr/3cr. Liang-Jenq Leu  
Definitions and concepts; Basic equations: equilibrium, compatibility and constitutive equations; Axial element; Direct stiffness method; Programming for FRAME08; 3D beam-column element – strength of materials approach; Coordinate transformation; contragredient principle and congruent; Solution of linear algebraic equations; Equivalent nodal loads; self-straining problems; support settlement (I) ’08-1, ’09-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972FEM

521EM6410  
Digital Photogrammetry  
Lecture – 3hr/3cr. Jen-Jer Jaw  
1) Introduction 2) Background 3) Fundamental of Digital Photogrammetry 4) Applications of Digital Photogrammetry (I) ’08-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971D_P

521EM6420  
Special Topic in Photogrammetry  
Lecture – 3hr/3cr. Jen-Jer Jaw  
1. Learning of photogrammetric methodologies. 2. Learning of the up-to-date photogrammetric development. 3. Conducting a photogrammetry-related project. (I)(II) ’07-2, ’09-1  
Prerequisite: n/a  
URL: n/a

521EM6480  
Structural Control (I)  
Lecture – 3hr/3cr. Kuo –Chung Chang  
Introduce the basic concepts and theories of passive energy dissipation and seismic isolation for structural applications, and discuss current research, development, design and code-related activities in this field. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972PSC_1
521EM7180  
Seismic Design of Steel Structures  
Lecture – 3hr/3cr. Keh-Chyuan Tsai  
Prerequisite: n/a  
URL: n/a

521EM7260  
Seismic Analysis and Design of Structures  
Lecture – 3hr/3cr. Chin-Hsiung Loh  
This course will teach a profound influence of earthquake performance of structures and provide the principal of earthquake resistant design. (I)(II) '07-2, '09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981earthquake

521EM7300  
Behavior of Reinforced Concrete Structure  
Lecture – 3hr/3cr. Hwang, Shyh-Jiann  
The course objective is to develop an understanding of advanced topics in design of reinforced concrete structures. The primary emphasis will be on behavior, analysis, and design of elements and systems that are common in building and bridge structures. (I)(II) '07-2, '09-1  
Prerequisite: All students are assumed to have the requisite background given in an undergraduate course on behavior and design of reinforced concrete elements.  
URL: n/a

521EM7450  
Stochastic Processes and Uncertainty Analysis  
Lecture – 3hr/3cr. W-S Tsai  
Familiarize students with basic concepts of mathematical modeling under uncertainty. Provide students with fundamental knowledge and quantitative approaches necessary for modeling natural processes under uncertainty. (II) '08-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972stochastic

521EM7540  
Probability Theory and Modeling  
Lecture – 3hr/3cr.  
While a sophisticated level of quantitative abilities or mathematical modeling is needed in both academia and practice, it is often promoted that such courses are academically difficult subjects, reserved for the truly gifted. With the advancement of technology, students seem to resort to computer software as a panacea without truly understanding the basics of the problem. Students often times ignore the fact that mathematical modeling should not just be punching numbers into a model and waiting for what comes out from it. Lack of an appropriate quantitative skill could result in poor data interpretation, inaccurate modeling and improper engineering design. The major objectives of this course are to stimulate students’ learning interest in probability modeling and improve their quantitative skills. (I) '09-1  
Prerequisite: Statistics Engineering Mathematics I and II or equivalent  
URL: http://ceiba.ntu.edu.tw/981probability

521EM7590  
Advanced Concrete Theory  
Lecture – 3hr/3cr. Jenn-Chuan Chern  
To introduce the subjects regarding the micro and macro properties, mechanical behavior, and concept of material design of cementitious materials. (I) '09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981advconcrete
521EU0070  
**Numerical Methods in Geotechnical Engineering**  
Lecture – 3hr/3cr. *Fu-Shu Jeng*

(II) '07-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971AdvancedConcrete

521EU0620  
**Soil Dynamics and Foundation**  
**Vibration**  
Lecture – 3hr/3cr. *Meei-Ling Lin*

The objective of this course is to introduce the basic concept of soil behavior and response when subjected to dynamic loadings such as earthquake and machine foundation, and to provide basic knowledge for dynamic soil behavior and properties. (I) '08-1, '09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981SoilDy

521EU3170  
**Advanced Concrete Theory**  
Lecture – 3hr/3cr. *Yin-Wen Chan*

1) Basic Material Properties-An Overview. 2) Cement Hydration and Microstructure. 3) Concrete Strength Development. 4) Creep and Shrinkage of Plain and Structural Concrete. 5) Durability. 6) High-Temperature Effect: Design of Fire Resistance of Concrete Structural Members 7) Very Low Temperature Effects: Design of Concrete Vessels for Cryogenic Liquids. 8) Linear Elastic Fracture Mechanics: Stress Approach and Energy Approach. 9) Special Type of Concrete Materials (High Performance Concrete). 10) Micromechanics of Fibrous Composites-Elastic Modules and Stress-Strain Relation Tensile Strength of Fiber Reinforced Composites (I) '08-1, '09-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971AdvancedConcrete

521EU3300  
**Information Management for Engineering Project**  
Lecture/ discussions – 3hr/3cr. *Shang-Hsien Hsieh*

This course discusses the fundamentals and applications of engineering information management through lectures, in-class group discussions, homework assignments, and projects. (I) '09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981EIM

521EU3340  
**Plastic Analysis and Design**  
Lecture – 3hr/3cr. *Kuo-Chun Chang*

Prerequisite: n/a  
URL: n/a

521EU8720  
**Robotics in Construction Automation**  
Lecture – 3hr/3cr. *Shih-Chung Kang*

This course is designed for graduate students and senior undergraduate students to understand the latest development of robotics in construction automation. By studying and discussing the assigned materials (including book chapters, journal/conference papers and selected webpages), students will be familiar with fundamental robotics and varied applications of robots in the construction industry. Multiple programming projects will be assigned to help students gain the hands-on experience of robot development and controls. (II) '07-2  
Prerequisite: Programming Language or equivalent course  
URL: n/a
521EU8750  
Geotechnical Reliability Analysis and Reliability–Based Design  
Lecture – 3hr/3cr. Jianye Ching  
1) Review of Probability 2) Characterization of geotechnical uncertainties 3) Reliability analysis 4) Reliability-based design 5) System reliability (I) '08-1, '09-1  
Prerequisite: n/a  
URL: n/a

521EU8770  
Railroad Transportation Engineering  
Lecture – 3hr/3cr. Jianye Ching  
Rail transportation requires infrastructure, vehicles, motive power and energy to move goods and people. Each of these factors interacts to affect the efficiency, energy requirements and economics of railroad operation. It is designed to establish the basic understanding and skills for conducting railway research and industrial projects. (I) '08-1, '09-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971RTE

521EU8800  
Visualization in Architecture Engineering Construction  
Lecture – 3hr/3cr. Shih-Chung Kang  
1) Applications of visualization technologies in aec 2) Hands-on programming projects (II) '08-2  
Prerequisite: n/a  
URL: n/a

522EM1460  
Advanced Thermodynamics (I)  
Lecture – 3hr/3cr. Kuo-Long Pan  
In this course, advanced concepts of thermodynamics will be presented. Starting with postulation approaches, the physical structure of thermodynamics shall be elucidated in a fundamental manner. In contrast to conventional engineering approaches that are generally focused on the application aspects, we will discuss the logic induction and mathematical framework that shape this subject. In addition to the relevant examples, regarding the formulation and description of fundamental equations, specific interest shall be directed to advanced topics such as stability of thermodynamic systems, phase transition, and critical phenomena. Furthermore, more insight will be gained as the macroscopic elements are connected to the microscopic structure, through the interpretation of entropy, in terms of the statistical mechanical treatment. (I) '09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/972CFD

522EU2960  
Computational Fluid Mechanics  
Lecture – 3hr/3cr. Kuo-Long Pan  
This is an introductory course to computational methods for fluid dynamics. Following a preface to numerical simulation and a review of the governing equations for mass, momentum, and energy, the structure and mathematical behaviors of partial differential equations will be discussed, which are classified as hyperbolic, parabolic, and elliptic types. A discretization scheme to approximate the mathematical models, i.e. the finite-difference method, will be described along with the analyses for the resulting errors and stability; they are followed by the strategies of allocation and transformation of grids. Some typical CFD techniques will then be illustrated, in terms of various schemes suited for different categories of PDE's. With sufficient background of the elementals, we shall work on real problems for solving the Navier-Stokes equations on the basis of pressure correction approaches. The students will have an opportunity to practice coding and simulating flow field. Various methods of discretization other than the finite-difference approach, such as finite-volume method and finite-element method, would be briefly mentioned if time is available. (II) '08-2  
Prerequisite: Fortran Or C Programming Language, Basic Knowledge Of Fluid mechanics, and numerical analysis.  
URL: http://ceiba.ntu.edu.tw/972CFD
522EU5480
Introduction to Rocket Propulsion
Lecture/Discussion – 3hr/3cr. Kuo-Long Pan
Prerequisite: Thermodynamics, Fluid mechanics, Heat/mass transfer. Knowledge of compressible flows and combustion will help to go through the topics.
URL: https://ceiba.ntu.edu.tw/971Rocket

524EM1200
Advanced Heat and Mass Transfer
Lecture – 3hr/3cr. Chin-Chen Hsieh
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972_AHMT

524EM1110
Advanced Chemical Engineering Thermodynamics
Lecture – 3hr/3cr. Shiang-Tai Lin
The Laws of Thermodynamics ; Equilibrium and Equilibrium Criteria ; Fugacity and its evaluation ; Vapor-liquid and liquid-liquid equilibria ; Solubility of gases or solids in liquids ; Electrolyte solutions ; Chemical equilibria ; Intermolecular forces ; Introduction to statistical thermodynamics ; Ideal gases ; Interacting molecules in a gas ; Distribution functions and Integral Equation Theories ; The generalized van der Waals Theory (II) ’07-2, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972advthermo

524EM1120
Advanced Chemical Engineering Kinetics
Lecture – 3hr/3cr. Cheng-Che Hsu
1) Review on Thermodynamics and Ideal Reactors 2) Catalytic Reactors and Non-ideal Reactors 3) Catalyst Decay and Non-Catalytic Gas Solid Reaction (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971adv_kinetics

524EM1210
Advanced Fluid Dynamics
Lecture – 3hr/3cr. Chih-Chi Hsieh
1) Introduction. 2) Vector and Tensor. 3) Equations of change and Navier-Stokes eqn. 4) Fluid statics and surface tension. 5) Nondimensionalization and solution to simplified N-S eqn. 6) Creeping flow. 7) Lubrication approximation. 8) Ideal flow. 9) Boundary layer theory. 10) Turbulence. 11) Non-Newtonian Fluid (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971_Adv_fluid_Mech2

524EM1310
Process Optimization
Lecture – 3hr/3cr. Cheng Liang Chen
This course will emphasize the understanding of fundamental concepts in process optimization, and introduce the widely used mathematical programming approach in solving the chemical processes synthesis and design problems. We are going to teach the students to (1) understand the basic concepts of process optimization and corresponding methodologies; (2) formulate optimization problems; (3) understand linear program, nonlinear program, mixed-integer linear/nonlinear program and the main solution techniques; (4) understand the basic concept of pinch method and its application on process integration; (5) apply mathematical programming methods in the area of process integration; (6) use Matlab
Optimization Toolbox and GAMS software for solving optimization problems. (I) '08-1
Prerequisite: n/a
URL: http://pse.che.ntu.edu.tw/chencl/Optimization/2008/

524EM1350
Computer Aided Process Design
Lecture – 4hr/3cr. Cheng Ching Yu
Study simulation and design of chemical processes using computer with emphasis on interaction between design and control (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

524EM1900
Environmental System Engineering
Lecture – 3hr/3cr. Duu-Jong Lee
Overview of environmental engineering discipline. Physical, chemical, biological interactions within the environment and associated engineering problems. Introduction to common processes for pollution control. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971Envsyst

524EU0560
Selective Topics in Unit Operations
Lecture – 4hr/3cr. Kohei Ogawa
The usefulness of information entropy as a new perspective in the Chemical Engineering is lectured by using many concrete examples and the surrounding basic knowledge of chemical engineering will be taught, too. The significance of a consistent viewpoint for a leading chemical engineer will be mastered through the class. (I) '09-1
Prerequisite: It is desirable that the minimum level of chemical engineering knowledge is mastered.
URL: https://ceiba.ntu.edu.tw/972_UT

524EU1040
Special Topic in Biochemical Engineering
Lecture – 3hr/3cr. John A. Morgan
This course will present an introduction to bioprocess engineering. Students will learn fundamental microbiology, protein engineering and bioreactor design. (1) Introduction; Cell Biology; Metabolism, (2) Enzymes; Enzyme Kinetics, (3) Biocatalysis; Immobilized Enzymes, (4) Modeling Strategies; Lit. Review Assignment, (5) Bioreactor Selection; Instrumentation and Control Scale-Up, (6) Solid State Fermentation; Sterilization, (7) Plant Cell Culture; Animal Cell Culture; Protein Engineering, (8) System Biology. (I) '09-1
Prerequisite: n/a
URL: n/a

525EU0090
Engineering Statistics
Lecture – 3hr/3cr. Chi Fang Chen
Help students establish the fundamental concepts of probability and statistics. (II) '07-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962ES
527EM4400  
Ceramics Smart Materials  
Lecture – 3hr/3cr. Tzong-Lin Jay Shieh

This course is designed to provide the students with a broad coverage of the physical properties, processing and applications of ferroelectric materials. The syllabus includes: introduction to smart materials, fundamental aspects of ferroelectrics, parameters for ferroelectric ceramics and their measurements, principal ferroelectric types and applications, multi-axial responses of ferroelectrics under stress and electric field, ferroelectric thin films, and design and fabrication of ferroelectric devices. (II) ’07-2

Prerequisite: n/a  
URL: n/a

543EM1020  
Applied Mathematics (I)  
Lecture – 3hr/3cr. Mao-Kuen Kuo

I. Cartesian Tensors  II. Ordinary Differential Equations III. Partial Differential Equation

(1)(II) ’07-2, ’08-1, ’08-2, ’09-1

Prerequisite: Calculus; Engineering Math (I & II), or Advanced Calculus  
URL: https://ceiba.ntu.edu.tw/971Applied_Math

543EM4010  
Dynamics  
Lecture – 3hr/3cr. Yio-Wha Shau

I. Newtonian Dynamics; II. Motion of Rigid Body in a Moving Reference Frame; III. Dynamics of a Rigid Body; IV. Lagrangian Dynamics; V. Hamiltonian Dynamics (II) ’07-2, ’08-2, ’09-1

Prerequisite: n/a  
URL: n/a

543EM4700  
Quantum Mechanic (I)  
Lecture – 3hr/3cr. Jui-Lin Chen

The Emergence of Quantum Physics; Wave particle Duality, probability, and the Schrödinger Equation; Eigenvalues, Eigenfunctions, and the Expansion Postulate; One-Dimension Potentials; The General Structure of wave mechanics; Operator Methods in Quantum Mechanics; Angular Momentum; The Schrödinger Equation in Three Dimensions and the Hydrogen Atom; Matrix Representation of Operators; Spin.(II ) ’08-2

Prerequisite: n/a  
URL: n/a

543EM4730  
Electromagnetism  
Lecture – 3hr/3cr. Jien-Zhang Chen


Prerequisite: General Physics; Engineering

541ED0060  
English Presentation for Scientists and Engineers (I)  
Lecture/ Discussion – 2hr/2cr. Angela Yu-Chen Lin

1) Introduction to Technical Communication in the Realm of Science and Technology  
2) Oral Presentation Preparation: Target your talk (Audience, Purpose, Beginnings, and Endings), Good presentation slides, Visual aids, Practice, practice, practice  
Delivery, Take control of the situation, Voice and language, Body language and gestures, Handling question-and-answer 3) Writing for Publication, Dissertation and Proposals 4) Legal and Ethical Issues in Technical Communications (I)(II) ’08-1, ’08-2, ’09-1

Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971eng_presentation

541EM0400  
Operations Research  
Lecture – 3hr/3cr. Hwong Wen Ma

Learn how to use methods of mathematical programming to determine how best to design and operate a system (I) ’08-1

Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/971_or
543EM4760  
Electromagnetism (II)  
Lecture – 3hr/3cr. Sheng-Der Chao  
0. Review of EM I and classical dynamics  
1. Maxwell equations, Conservation laws  
2. Electromagnetic Waves, Wave guides  
3. Potentials and fields, gauge transformation  
4. Radiation, scattering  
5. Electrodynamics, charges in electromagnetic fields  
6. Special relativity  
Prerequisite: Electromagnetism  
URL: n/a

543EM4890  
Applied Biophysical Chemistry (II)  
Lecture – 3hr/3cr. Sheng D. Chao  
This course is designed primarily for engineering students to enlarge their knowledge base. The aim is to apply modern physical chemistry to problems of biological importance such as bioenergetics, enzyme kinetics and transport dynamics of biomolecules. In the second part of this course, more quantitative discussion on the techniques from physical chemistry will be emphasized.  
Prerequisite: n/a  
URL: n/a

543EM4900  
Applied Quantum Mechanics  
Lecture – 3hr/3cr. Sheng-Der Chao  
With recent advances in nanotechnology, the practical knowledge of quantum mechanics will be introduced in this engineering course. Starting from the fundamental postulates of quantum mechanics, I introduce basic techniques for solving the Schroedinger equations for simple systems. Then I move to more advanced techniques using different kinds of approximation. The contents are  
1. Postulates and Schroedinger equation.  
2. Simple systems, free particle, 1D problems.  
3. Harmonic oscillators, simple rotors.  
5. Gaussian wave packets.  
7. Adiabatic approximation.  
8. Perturbation theory.  
10. Special topics.  
Prerequisite: General physics, General

543EM4910  
Introduction to Microcontinuum Mechanics and its Applications  
Lecture – 3hr/3cr. Kuo-Ching Chen  
Accompanying with the progress of material science and technology, the applications of complex materials are ubiquitous. Based on the traditional continuum mechanics, the microcontinuum field theory is a powerful tool to characterize the responses of complex materials. This course will briefly introduce the basic concept of microcontinuum and the possible applications of this theory to liquids, red blood flow, granular materials, and dynamics of lung.  
Prerequisite: n/a  
URL: n/a

543EM5110  
Elasticity (I)  
Lecture – 3hr/3cr. Pei-Ling Lin  
Methods that can be used to analyze the stress and deformation of elastic bodies under external loading.  
Prerequisite: General physics, General

543EM5240  
Materials Applications and Analysis in High-Tech Industry  
Lecture – 3hr/3cr. Jian-Zhang Chen  
In this course, students will learn materials fundamentals and analysis tools. The target is to help students build up insights for future materials application, to train students using the materials R&D to improve the competitiveness in high-tech industries.  
Prerequisite: General physics, General

-50-
543EM5770
Fabrication And Design in Optical Mem
Lecture – 3hr/3cr. Long Sun Huang

This course is concerned with micromachined optical elements including optics-related process, optic films, structures, and optical transducers: sensors that detect light, and actuators that emit or modulate light. Compared to micromechanical devices, new devices continue to emerge rapidly. Some of the micromachining approaches have been applied to optical transducers, e.g., micro display and optical switches. There are many more potential applications for micromachined in optical transducers in areas of beam scanning, position, coupling, miniaturized optical system and so on. In addition to the optics related lectures, this course will also provide lab projects for simplified hands-on experiment to gain practical sense of micro-optics. (II) ’07-2, ’08-1, ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981MEMS

543EM6230
Bio-Fluid Mechanics
Lecture/Discussion – 3hr/3cr. Yio Wha Shau

This course is to give an overview of circulatory biomechanics from the standpoint of engineering, physiology, and medical sciences. Experimental results from advanced clinical researches are used as examples and served as the guide to new focused research areas with great clinical values. (I) ’08-1
Prerequisite: n/a
URL: n/a

543EM6380
Statistical Thermodynamics
Lecture – 3hr/3cr. Sheng D. Chao

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_981543M6380.doc
543EM6510
Rarefied Gas Dynamics
Lecture – 3hr/3cr. Jaw-Yen Yang

In Part I, the fundamental aspect of kinetic theory and its related transport phenomena are introduced. In Part II, the Chapman-Enskog expansion theory is introduced to derive the Euler, Navier-Stokes equations and the Burnett equations. In Part III, numerical methods for solving the Boltzmann equation and model Boltzmann equations are described. This course thus will provide both a fundamental view of the fluid theory suitable for many advanced technology and a practical tool for simulating rarefied gas flows. (I) ’09-1
Prerequisite: n/a
URL: n/a

543EM6930
Introduction to Microfluidies
Lecture/Discussion – 3hr/3cr. Andrew Wo

Microfluidics is proving to be an invaluable tool in the world of bio/chemical applications of micro total analysis systems (mTAS). Advantages of such a mTAS system is substantially reduction on almost all quantities involved: hardware dimensions, volume of samples or reagent needed, reaction time, and power required. System-level benefits include increased level of automation or integration of sample treatment steps, and ease of multiplexing or parallel processing. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971mfd

543EM6980
Special Topics on Biomedical Engineering
Lecture – 3hr/3cr. Yio-Wha Shau

Biomedical Engineering is a highly multidisciplinary research area that encompassing biomechanics, biomaterials, biosensors, medical instrumentation, medical imaging, and tissue engineering. Most important issue is the engagement with the life science. Recently, medical device research has attracted a lot of attention in Taiwan due to the related industrial prosperity. This course is aiming to provide not only the basic biomedical principles, but also the key technologies, patents and market analysis of medical devices in demand and global trend of medical device research. (I) ’09-1
Prerequisite: n/a
URL: n/a

543EM8160
Technical Communication and Writing
Lecture /Discussion – 3hr/3cr. Andrew Wo

Develop English ability in various aspects of communication skills needed for research. Skills for informal setting include: email communication, chatting with researchers during a conference, short technical talk etc. (II) ’07-2, ’08-2
Prerequisite: at least basic level of English ability
URL: https://ceiba.ntu.edu.tw/972tcw

543EU8170
Scientific Taiwan- One of Series Courses of Exploring Taiwan
Lecture – 2hr/2cr. Horn-Jiunn Sheen

Introduce many new technology achievements in Taiwan industries and research institutes during the past few decades. During each class, one or two technological topics will be introduced and a 30-minutes video movie will be presented to the students. Students will have two site-visiting tours, one on-campus and one off-campus. (I) (II) ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: n/a

544EM4160
Landscape and Identity: Placemaking Across World Cultures
Lecture – 3hr/3cr. shenglin chang

Most of the time, when we think about landscape we think about it as an object that is separate from us. In this course we will examine various cultural perspectives that challenge the view of landscape’s
relationship to self will run parallel to an ongoing exploration of how landscape can inform questions about the personal and social implications of living within an era of globalization. (I) '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_981544M4160.pdf

546EM0110
Industrial Engineering and Management
Lecture – 3hr/3cr. Ming-Tzong Wang
Participative management is rapidly becoming the industrial management reality because it works; and it will continue to be the reality of the future. Industrial engineers are intimately involved in shaping and perfecting this improved management culture shift. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972iem

546EM3000
Special Topics on Global Logistics Management
Lecture – 2hr/2cr. Ming-Tzong Wang
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972stglm

546EM3010
Service Innovation and Total Quality Management
Lecture/discussion – 3hr/3cr. Ming-Tzong Wang
In The Advent Of 21st Century, Service Innovation And Total Quality Management Get Increasing Awareness In No Matter Public Sectors Or Private Companies. Services Touch The Lives Of Every Person: Food Services, Communication Services, Emergencies Services And Etc. And Total Quality Management (TQM) Is A Hot Topic In Business And Academic Circles. Business Managers And Academicians Are Fervently Trying To Figure Out What It Is And Utilize It In Any Settings. (I) '09-1
Prerequisite: n/a
URL: n/a

546EM3020
Special Topics on Total Management
Lecture – 2hr/2cr. Ming-Tzong Wang
Learn that Total Quality Management, properly implemented, can never be just another program or a managerial style or a motivational gimmick for application at the lowest level of the organization. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972tqm

546EM3040
Research Methodology
Lecture – 2hr/2cr. Ming-Tzong Wang
The purpose of this course is to assist students in learning qualitative and quantitative research. (I)(II) '07-2, '09-1
Prerequisite: n/a
URL: n/a

546EM3050
Project on Technology Strategy and Management
Discussion – 2hr/2cr. Ming-Tzong Wang
Focuses on technology policy and technology management. Addressed to those graduate students who wish to understand technology policy and technology management. The basics and related theories of technology policy and technology management will be absorbed through reading journal papers and books. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972ptsm
546EU0650  
Dynamics Decision Methods and Industrial Applications  
Discussion/Lecture – 3hr/3cr. Cheng-Hung Wu  
Model problems in which decision making is an issue, construct and solve multi-period decision making problems, know how to include randomness in multi-period decision-making problems, understand basic stochastic programming and stochastic dynamic programming, understand basic game theory and its application to decision problems with multiple decision makers. (II) ’08-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972DDM

546EU0660  
Game Theory with Applications  
Lecture – 3hr/3cr. I-Hsuan Hong  
In this course we will study the interactions between multiple players (decision makers). Such problems arise frequently in supply chain applications. The interaction of a firm with its competitors, customers and suppliers can be modeled as a game, and hence, our main tool of analysis in this course will be Game Theory. Course goals will be accomplished through lectures, homework and readings. Lectures will emphasize the theoretical aspects of the field, and homework will focus on problem solving skills. (I) ’09-1  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981gt

546EU6110  
Production and Operations Scheduling  
Lecture – 3hr/3cr. Kwei-Long Huang  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/981Scheduling

548EM0100  
Materials Sciences and Engineering  
Lecture – 3hr/3cr. Feng-Huei Lin  
Prerequisite: Basic Chemistry, Basic Physics  
URL: n/a

548EM0150  
Tissue Engineering  
Lecture – 3hr/3cr. Feng-Huei Lin  
This course is intended to provide you with an introduction to recent biomedical research activities in the area of tissue engineering. The term “tissue engineering” has been coined to describe the interdisciplinary field concerned with the study of generation or regeneration of tissues. Researchers in this area utilize knowledge of the molecular basis of cellular function and interactions, in combination with fundamental engineering principles, to gain insights into tissue structure and function, with the purpose of developing bioartificial tissues or enhancing native tissue function. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: http://bme.ntu.edu.tw/eng/3_academics/3_syllabus01.htm

548EM0400  
Fundamentals of Biomedical Image Processing  
Lecture – 3hr/3cr. Chung-Ming Chen
As an introductory course to the biomedical image processing, the aim of this course is to offer the entry-level graduate students the fundamental image processing techniques. The scope of this course will cover the basic transformation techniques, properties of various medical images, image acquisition, processing and rendering. In addition to the regular lectures, the students are required to exploit advanced techniques independently to reinforce learning. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

548EM0430
Medical Image Analysis
Lecture – 3hr/3cr. Chung-Ming Chen

This course has been designed as a topic-driven learning course. Three topics were chosen, though not necessarily fixed, in this semester, namely, tumor detection on CT/MRI, lesion detection/computer-aided diagnosis on breast sonograms, and liver cirrhosis computer-aided diagnosis on liver sonograms. For each topic, the students will be asked to discuss what works need to be done to accomplish the job. Then, the instructor will first present some background knowledge, followed by student presentations on the related techniques. All students will be teamed up with 2 or 3 students in a group to solve each topic. The performance on each topic will be used as the basis for class grading. (II) ’07-2
Prerequisite: (recommended but not required) Medical Imaging Systems, Signal and System, Image Processing techniques
URL: syllabus_962548M0430.doc

548EM0650
Nano / Micro Engineering in Biomedicine
Discussion/Lecture – 3hr/3cr. Chii-Wann Lin

1) Go through several available microfabrication systems in the groups. Cover selective topics in thin film & MEMS modeling. 2) Go through biomolecular immobilization and amplification technologies. 3) Review several optical measurement methods for the quantitative investigation of molecular dynamics. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972NMEB

548EM0910
Optimization in Biomechanical Engineering
Lecture – 3hr/3cr. Tung-Wu Lu

1. Introduction to optimal design: design concept and problem formulation
2. Linear Programming (Unconstrained and Constrained)
3. Non-Linear Programming (Unconstrained and Constrained)
4. Multiobjective Optimisation
5. Discrete Optimisation
6. Optimal control of joint motion and human movement
7. Design principles of the human musculoskeletal system
8. Bone remodelling
9. Optimal design of prosthetic devices
10. Optimisation methods in the determination of muscle forces
11. Optimisation of surgical and rehabilitation procedures
12. Optimisation of biomechanical data
   (II) '07-2, '08-2
Prerequisite: n/a
URL:
http://bme.ntu.edu.tw/eng/3_academics/3_syllabus01.htm#T972

548EM0920
Human Movement Analysis
Lecture – 3hr/3cr. Tung-Wu Lu

Human posture and movement are a result of highly coordinated mechanical interactions between bones, joints, ligaments and muscles under the control of the nervous system. Understanding of the synthesis and control of human movement requires a complete knowledge of the force interactions within the neuromusculoskeletal system. The objectives of this course are to provide the mechanical basis underlying body posture and movement; and to equip the students with the knowledge and techniques necessary for the analysis of human movement for clinical applications and research. Upon completion of this course, the students will have a clear understanding of the mechanics of posture and movement as well as the theoretical basis and ability of operation of instruments used in human motion analysis such as stereophotogrammetry systems, EMG and force plates. (I) '08-1, '09-1
Prerequisite: n/a
URL: n/a

548EM1240
Data Mining
Lecture – 3hr/3cr. I-Jen Chiang

Prerequisite: n/a
URL: n/a

548EM1500
Applications of MEMS for Cell and Tissue Physiology
Lecture – 3hr/3cr. Pen-Hsiu Chao

The development of using MEMS and microfluidics for studying cell and tissue physiology. Applications in tissue engineering or establishing cell/tissue models will also be discussed. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971MEMS

548EM1510
Cell and Molecular Biology for Optoelectronics
Lecture– 3hr/3cr. Pen-Hsiu Chao

Basic cell and molecular biology and how to apply optoelectronics in studying these topics. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971CellBio

548EM1530
Special Topics in Orthopaedics
Tissue Engineering
Lecture – 3hr/3cr. Penhsiu Chao

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972OrthoTE

548EU0110
Introduction to Biomaterials
Lecture – 3hr/3cr. Feng-Huei Lin
1. The Problem of the Missing Organs. 2. Approaches for Missing Organs. Five approaches have been used to solve the problem of the missing organ.
(1) Autografting
(2) Transplantation (Allograft or Xenograft)
(3) Synthesized Tissues
(4) Engineered Biomaterials
(5) Analog of the Extracellular Matrix (ECM)

3. Conclusion
Efforts to induce regeneration have been successful with only a handful of ECM analogs. Evidence of regeneration is sought after the ECM analog has been implanted in situ, i.e., at the lesion marking the site of the missing organ. When morphogenesis is clearly evident, based on tests of recovery both of the original tissue structure and function, the matrix which has induced these physiological or nearly physiological tissue is named a regeneration template. (II) 07-2, 08-2

Prerequisite: n/a
URL: http://bme.ntu.edu.tw/eng/3_academics/3_syllabus01.htm

548EU0120
Advanced Biochemistry
Lecture – 3hr/3cr. Feng-Huei Lin

“Advanced Biochemistry” is a multidisciplinary science; the first task in presenting it to students of widely varying backgrounds is to put it in the class. Part one provides the necessary background and connects bio-molecules to the other sciences. Part two focuses on the structure and dynamics of important cellular components. Molecular biology is covered in Part three. The final part of the class is devoted to intermediary metabolism. Some topics are discussed several times, such as control of carbohydrate metabolism. Subsequently discussions make use of and build on information students have already learned. It is particularly useful to return a topic after students have had time to assimilate and reflect. The class gives an overview of important topics of interest to biomaterials scientists and shows how the remarkable recent progress of bio-molecules impinges on other sciences. The length is intended to provide students with a choice of favorite topic without being overwhelming for the limited amount of time available in one semester.

The class is intended for students in any field of science or engineering who want to go further on biochemistry. The main goal of the class is to make biochemistry as clear and as interesting as possible and to familiarize all science students with the major aspects of biochemistry.

Students who is going to join the class should have the level at least one year general chemistry. (I) 08-1, 09-1

Prerequisite: Students who is going to join the class should have the level at least one year general chemistry.
**College of Bioresources and Agriculture (94)**

**Contact info:**
Dr. How-Jing Lee (m480@ntu.edu.tw)
Jack Chih-Hsiung Hsu (ntuciaeae@ntu.edu.tw)
Center for International Agricultural Education and Academic Exchanges

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**602E27800**  
**General Ecology**  
Lecture – 3hr/3cr. Rita S. W. Yam

Introduce the basic principles of ecology and its applications at different levels of ecosystems. Explain how the environment affects organisms in terms of their present-day ecology. Explain the value of biodiversity to human and biodiversity management. Introduce the economical and socio-political dimensions of nature and environmental management. (II) '07-2, '08-2

Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971HortTech_1

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**605E31200**  
**Forest Climate & Practice**  
Lecture/Lab – 5hr/3cr. Tomonori Kume

This course consists 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. (I) (II) '07-2, '08-2, '09-1

Prerequisite: n/a  
URL: n/a

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**608E20240**  
**Horticultural Techniques (I)**  
Lecture/ Laboratory – 5hr/2cr. Kuo-Tan Li

The first part of Horticultural Techniques Series. An integral course of skill learning and practicing for gardening and orchard managing, required for sophomore in Horticulture major. Essential skills and techniques practiced in the garden and the field will be introduced to course participants through various gardening and field projects/activities. (I) '08-1, '09-1

Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972HortTech_1

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**608E20250**  
**Horticultural Techniques (II)**  
Lecture/Laboratory – 5hr/2cr. Kuo-Tan Li

An integral course of skill learning and practical training on gardening and orchard management, required for sophomore in Horticulture major. Essential skills and techniques practiced in the garden and the field will be continuously introduced to course participants through various gardening and field activities. (II) '07-2, '08-2

Prerequisite: Sophomores in Horticulture major and have completed introductory levels of horticultural course.  
URL: https://ceiba.ntu.edu.tw/972HortTechII

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**608E31310**  
**Deciduous Fruits (I)**  
Lecture/Laboratory – 3hr/3cr. Kuo-Tan Li

Deciduous fruits (temperate fruit crops) constitute to be a great portion of the world fruit industry and science. The diversity and the uniqueness of the location and the climate of Taiwan enable deciduous fruit to be produced in the subtropical and tropical areas. Over the years Taiwan has developed some unique production systems and great research potentials of deciduous fruit crops. Deciduous Fruits I provides information on major economical deciduous fruit crops with
emphasis on pome fruits, stonefruit, persimmons and some other minor woody deciduous fruit crops. (I) ’08-1, ’09-1

Prerequisite: Pomology or equivalent
URL: https://ceiba.ntu.edu.tw/971DF_1

608E31320
Deciduous Fruits (II)
Lecture – 3hr/3cr. Kuo-Tan Li

As the second part of the Deciduous Fruits Series, Deciduous Fruits II is an introductory-level course attempting to deliver general knowledge of viticulture and berry crops to undergraduate students. Upon completion, students are expected to be familiar with 1) Major species and varieties of berry crops 2) Biological and physiological characteristics 3) their cultural practice and production principles 4) available resources 5) Taiwan’s grape industry and production systems 6) World major grape producing areas and their production systems. (II) ’07-2, ’08-2

Prerequisite: Pomology or equivalent
URL: https://ceiba.ntu.edu.tw/972DFII

609E55500
Small Animal Clinical Oncology
Lecture/Discussion – 2 hr/2cr. Jih-Jong Lee

Introduction to tumor biology; Biology Underlying Cancer Treatment; Practical Considerations; Specific conditions (I) ’08-1, ’09-1

Prerequisite: Small Animal Medicine (only available to VM students)
URL: https://ceiba.ntu.edu.tw/981SACO

613E301B0
Plant Pathology (B)
Lecture – 2hr/2cr. Chao-Ying Chen

(II) ’07-2

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962ppNTUspring

621EU6560
Fundamental Statistical Methods and data analysis
Lecture/ Laboratory – 3hr/3cr. Jen-Pei Liu

Fundamental statistical concepts and methods with correct applications: descriptive statistics, probability, discrete and continuous random variables, normal distribution, sampling distributions, point and interval estimation, hypothesis testing, t-test, chi-squared test, one-way analysis of variance, correlation and regression, and nonparametric methods. (I) ’08-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971intro_stat

622EU3600
Stochastic Hydrology
Lecture – 3hr/3cr. Cheng, Ke-Sheng

(II) ’07-2

Prerequisite: Statistics and Hydrology
URL: http://www.rslabntu.net/Stochastic_Hydrology/NTU/Stochastic_Hydro_Syllabus.html

622EU4400
Environmental Statistics and Risk Assessment
Lecture – 3hr/3cr. Ke-Shen Cheng

Design of sampling program and statistics methods for environmental data and risk assessment in health aspects at an elementary to intermediate level, with the emphasis on practical applications of statistical methods and models to experimental and monitoring data. (I) ’08-1, ’09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971envstat

622EU4600
Freshwater Ecology- Environmental Applications
Lecture / Laboratory – 3hr/3cr. Rita S. W. Yam

Physic-chemical and ecological aspects of the freshwater systems, esp. for Taiwan river,
causes and consequences of human modification of fresh waters, and their implications for conservation of aquatic biodiversity and maintenance of human well being, techniques which may be used to quantify the status of instream and riparian ecological niches, range of management strategies that can be used to reduce or mitigate human impacts on freshwater ecosystems and maintain water quality. (I)

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971fwecol

622EU4610
Biodiversity and Conservation
Lecture/Discussion – 3hr/3cr. Rita S. W. Yam

Conservation Biology is the science of preserving biological diversity. It is a newly developed, applied, mission-orientated, multidisciplinary science bringing together elements from ecology, genetics, forestry, animal husbandry, resource management and many other fields. (II) ’08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972conbiol

623EU2900
Soil Biochemistry
Lecture – 2 hr/2cr. Chao-Ming Lai


Prerequisite: Soil Science & Biochemistry
URL: https://ceiba.ntu.edu.tw/981sb

623EU4150
Transport And Fate Of Soil Pollutants
Lecture – 2hr/2cr. Lee, Dar-Yuan

(II) ’07-2, ’08-2

Prerequisite: n/a
URL: n/a

623EU4170
Survey and Remediation of Contaminated Soils
Lecture/Discussion – 2hr.

How to make a soil survey in the contaminated soils, how to make an evaluation of a contaminated site, How to use a good soil physical, chemical and biological remediation techniques to clean up the contaminated sites. Many case studies for discussion. (II) ’07-2, ’08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972soilremed

623EU4360
Special Topics on Soil Chemistry
Discussion – 1hr/1cr. Dar-Yuan Lee

(1) Multi-scale chemical processes that affect soil nutrients and contaminants; (2) State-of-the-art, molecular-scale analytical tools used to characterize nutrients and contaminants in heterogeneous geochemical matrices, with emphasis on phosphorus and trace element chemistry. (I) ’08-1

Prerequisite: n/a
URL: n/a

623EU4370
Special Topics on Carbohydrates
Discussion - 1hr/1cr. His-Mei Lai

Elucidate the chemical structures, modifications, and structure/function relationships of polysaccharides. Cellulose and starch will be emphasized on their applications in food and non-food industries. The fundamental and advance researches related to practical applications of cellulose and starch granule structures, reactivity will
be covered. (I) ’08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971CH2O

623EU4380
Medical Plant Cultivation and Applications
Lecture - 2hr/2cr. Ng Lean Teik
Course content includes (i) an overview of the current practices and techniques used in the cultivation of medicinal plants; (ii) the effects of environmental and physiological factors on plant growth and synthesis of bioactive constituents; and (iii) methods of medicinal plant applications and industry, examples on a specific medicinal plant cultivation and application will be presented. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

623EU4440
Special Topics on Molecular Mycology
Lecture - 3hr/1cr. Nai-Chun Lin
This course introduces the basic biology of the true fungi and other groups of organisms traditionally classified with the fungi. Particular emphasis will be placed on the impact of fungi on human affairs. The last part will be focused on the advantage of fungi as a model organism for molecular biology. Topics covered in this course include taxonomy, ecology, physiology, genetics and molecular biology of the major classes of fungi. (I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/981sp_mol_mycology

623EU4450
Genomics
Lecture - 3hr/1cr. Chwan-Yang Hong
This course will (1) provide an overview of these new approaches; (2) develop your problem solving skills to address specific aspects of gene expression regulation and strategies for defining gene functions; and (3) inform you of the applications of these new technologies in life science and medical researches. (I) ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/981genomicsAC

623EM1190
Soil Fertility (I)
Lecture – 2hr/2cr. Shan-Ney Huang
(I) ’08-1
Prerequisite: n/a
URL: n/a

623ED2360
Advanced Soil Biochemistry
Lecture – 2hr/2cr. Chao-Ming Lai
To teach the biochemical reactions and involved substances in soil, especially on the topics of soil organic matter, soil enzymes, enzymes in the environment, C, N, P, and S cycles, greenhouse gases emissions from soils, estimation and mitigation of greenhouse gases emissions from soils, management of agricultural wastes, sustainable agriculture, and sustainable forestry; and to introduce their applications as well. (I) ’09-1
Prerequisite: Soil Science or equivalent
URL: http://teacher.ac.ntu.edu.tw/CMLai/

623ED2390
Special Topics on Structural Biology
Lecture - 2hr/2cr. Chun-Hua Hsu
Study the molecular structure of biological relevance and its biological function. Structural biology itself is an interdisciplinary of biology, physics, chemistry, and information. Modern research tools and methods makes the development of structural biology in addition to exploring the lives of many unknown past, but also speed up the drug and novel protein design and application. For the theme of this course, the first part is systematically to introduce three famous proteins: green fluorescent protein, G protein-coupled receptor and HIV protease for the topics of protein engineering,
membrane proteins and drug design, respectively. The second part is to present the selected papers, distinguished from the current and standard research works. Students can make informed contemporary structural biology and the results of recent research and future development trends and challenges. (I) '09-1
Prerequisite: Biochemistry
URL: n/a

625EU1770
Outdoor Recreation and Ecotourism Planning
Lecture – 3hr/3cr. Yu-Fai Leung

This course will provide students with an understanding of the major principles and procedures associated with the planning of outdoor recreation and ecotourism areas and facilities, with special attention paid to their long-term sustainability. Students in this course will critically evaluate existing plans and develop conceptual plans for new areas, emphasizing the balance between the needs of people and the potential/limitations of natural resources. (II) '07-2
Prerequisite: Ecological Sciences or Management
URL: http://ceiba.ntu.edu.tw/962ppNTUspring

625EU1790
Biodiversity, Agriculture, and Culture of Taiwan
Lecture/Lab (S) Kuo-Fang Chung

[This course is offered in summer] '08, '09
Prerequisite: n/a
URL: n/a

625EU1850
Forest Environment Physics
Discussion – 3hr. Tomonori Kume

1) Theoretical background of water, hear, and carbon balance in forested ecosystem such as atmospheric condition (i.e., temperature, humidity, and radiation), heat transfer, and aerodynamic conductance. 2) Numerical analysis and field research techniques for here, water, and carbon balance through lectures, practices, and open discussion. (II) '08-2
Prerequisite: n/a
URL: n/a

625EM1610
Special Topics of Forest Environmental Measurement
Lecture - 3hr/3cr. Tomonori Kume

This course is consist of three sections. First section shows micro-meteorological measurement techniques such as temperature, humidity, and radiation. Second section provides measurement techniques for heat, water, and CO2 exchange between atmosphere and forests. In the third section, we learn field research, data analysis, making reports through field practices, and open discussion. (I) '09-1
Prerequisite: n/a
URL: n/a

627EM4660
Efficiency and Productivity Analysis
Lecture - 3hr/3cr. Shih-Hsun Hsu

The purpose of this course is to introduce four major methods and their applications in the measurement of efficiency and productivity growth. The four major methods are: least-squares econometric production models, index numbers, data envelopment analysis (DEA), and stochastic frontiers analysis. The basic concepts, characteristics and limitations of each methodology will be elaborated. Numeric exercises and case studies will be provided. (I) '08-1, '09-1
Prerequisite: n/a
URL: n/a
Note: only available to the Agricultural Economics Master Program

627EM4670
Agricultural Marketing
Lecture - 3hr/3cr. Cheng-Wei Chen

(I) '08-1, '09-1
Prerequisite: n/a
URL: n/a
627EM4680
**Applied Microeconomics**
Lecture/Laboratory - 3hr/3cr. Yir-Hueih Luh

Studies all kinds of individual decisions and how those decisions change in response to changes in the given conditions, a full exposition of the analytic tools used for the study of individual economic choices. Master the key concepts of optimization, equilibrium, comparative statics, as well as market analysis throughout the 18-week period. (I) ’08-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971_microinternational

627EM4720
**Mathematics for Economics**
Lecture - 3hr/3cr. Jerome Chun Ro Geaun

(I) ’09-1

Prerequisite: n/a
URL: n/a
Note: only available to the Agricultural Economics Master Program

627EM4740
**Advanced Macroeconomics**
Discussion – 3hr/3cr. Li-Fen Lei

Lecture the principles that students need to make sense out of the conflicting and contradictory discussions of economic conditions and policies in real life. (I) (II) ’08-1, ’08-2, ’09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972agecmacro
Note: only available to the Agricultural Economics Master Program

627EM4750
**Agribusiness Management**
Seminar – 3hr/3cr. Liu Fu-Shan

Agribusiness management encompasses many aspects of the economy: agricultural inputs suppliers, agricultural producers, businesses that provide supply and services to the producers (including cooperatives and associations, assembly market, wholesale market, retail market), businesses that add value to the agricultural products and those that facilitate the marketing of agricultural products to an ever-growing marketplace. The developing countries usually lack the strengths of the software systems including the organization, extension and financial system. No sale is no profit. How to increase the farmers’ incomes and upgrade their livelihood would probably through the well-functioned agribusiness system. The agricultural and food industries are currently undergoing significant changes and have to work in a more market oriented environment in order to fulfill consumer expectations and increasing environmental concerns. This course in agribusiness management is for students interested in careers eventually leading to managerial positions in the feed, fertilizer, farm machinery, plant seedling, agricultural products marketing, food processor, food supply chain, food export marketing, agricultural wholesale market operation and management and related industries. The course will focus on the use of financial statements, operating and managerial functions, strategic planning in agribusiness, marketing management in the agribusiness firm, selling in agriculture, controlling production, personnel management, managing human resources in agribusiness, and the tools for management decisions in agribusiness. Presentation is by lecture integrated with experiential learning through the use of a practical agribusiness case study in Taiwan. (II) ’07-2, ’08-2

Prerequisite: Agriculture Economics
URL: https://ceiba.ntu.edu.tw/course/CourseSyllabusUpload/syllabus_972627M4750.docx

627EM4760
**Agricultural Trade**
Lecture – 3hr/3cr. Rhung- Jieh Woo

I. Agricultural Trade Liberalization II. Introduction to International Trade Theory. III. Agricultural Trade Policy Analyses. (II) ’07-1, ’08-1

Prerequisite: n/a
URL: n/a
627EM4830  
Agricultural Policy Analysis  
Lecture - 3hr/3cr. Kuo-Ching Lin  
Agricultural policies and comprehend their economic outcomes. (I) '08-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971agpoan

627EM4840  
Agricultural Development  
Lecture/ Discussion - 3hr/3cr. Frank Fu-Shan Liu  
Working knowledge of economic principles and practices on a range of topics pertaining to agricultural development policy and program. (I) '08-1, '09-1  
Prerequisite: n/a  
URL: 607048Agricultural Development and Food Policy.doc  
Note: only available to the Agricultural Economics Master Program

627EM4860  
International Agricultural Cooperation  
Lecture/ Discussion - 3hr/3cr. Pai-Po Lee  
I. Agricultural and Trade Policy. II. Regional Strategies. III. International Agriculture Cooperation. IV. Approach: Rice and Technology. V. Future Prosperity (I) '08-1, '09-1  
Prerequisite: n/a  
URL: n/a

629EU2290  
Small Animal Clinical Nutrition  
Lecture/ Discussion - 3hr/1cr. Jih-Jong Lee  
I. Nutrients and Clinical Nutrition. II. Commercial pet food manufacturing, labels and regulations. III. Home make food and food safety. IV. Nutritional management of normal pets – normal, athlete canine and cats. V.~IX. Nutritional management of clinical patients. (I)~(V) X. Use of fatty acids in inflammatory disease and dietary effects on drug metabolism. XI. Feeding small exotic mammals, reptiles, Passerine and Psittacine birds (I) '08-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971SACN

630EU0420  
Introduction to e-learning  
Lecture – 3hr/3cr. Hsiu-Ping Yueh  
This 3 credits distance course explores both conceptual framework and practical applications of learning technology from the perspective of social computing. Topics include the economy engineering, cross-cultural collaboration, and the burgeoning development of social technologies. This course features a full set of collaborative learning works with project-based learning, a variety of online collaboration works, and a related resources section. Faculty of National Taiwan University and Kyoto University will work together to teach and coordinate the class and facilitate students on both sites. [註：與京都大學遠距教學] (II) '07-2  
Prerequisite: n/a  
URL: n/a
630EM3150  
Writing for Professional and Dissemination  
Lecture/Discussion – 2hr/2cr. Larry Miller  
Provide practical experience and the professional/scholarly knowledge and skills to aid students in preparing articles, papers and/or other manuscripts/products for refereed dissemination. Quantitative research will be the focus of the course. (II) '08-2  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972aca_writing

631EU9490  
Electrochemistry for Biomedical Researchers  
Lecture/Laboratory - 2hr/2cr. Richie Chen  
Introductory course with lab skill training for students lacking subtle background knowledge in especially chemistry, learn the underlying principles and the lab skills of the most frequently encountered electrochemical methods within one semester. (I) '08-1, '09-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971ElectroChem

631U8230  
Principles of Biomedical Imaging  
Lecture – 3hr/3cr. Cheng- Ying Chou  
This course will cover the fundamental interactions between different forms of energy and biological tissues, the signal and image processing techniques that are applied, and current clinical applications. In addition, the basic issues of resolution, contrast, acquisition time, and safety will be evaluated for each medical imaging modality. (II) '07-1, '08-2  
Prerequisite: Engineering Mathematics  
URL: https://ceiba.ntu.edu.tw/972biomed_imaging

631EM3140  
Random Signal Analysis  
Lecture – 3hr/3cr. Cheng- Ying Chou  
The class aims to familiarize students with the theory of random sequences and stochastic processes. Students will learn the mathematical tools available for the analysis and estimation of random phenomena, and see how stochastic modeling is used in practice. (II) '07-2, '08-2  
Prerequisite: Engineering Mathematics, Signal Processing  
URL: https://ceiba.ntu.edu.tw/972random_signal

631EM7660  
Unit Operations in Bio-Industry  
Lecture - 3hr/3cr. Cheng-Ying Chou  
This course covers staged and continuous-contacting separations processes critical to the chemical and biochemical industries. Processes considered include distillation, liquid-liquid extraction, gas absorption, leaching chromatography, crystallization, precipitation, filtration, and drying. Particular emphasis is placed on the biochemical uses of these processes and consequently on how the treatment of these processes differs from the more traditional approach. (I) '08-1, '09-1  
Prerequisite: Fluid Mechanics, Engineering Mathematics  
URL: https://ceiba.ntu.edu.tw/981biounit_ope ration
632EU0720
Special Topics on Insect Physiology
Lecture – 3 hr/1cr. How-Jing Lee
Design for senior undergraduate students and graduate students who are interesting in insect physiology. Topic: prostaglandins and other eicosanoids in insects. Dr. David Stanley who is professional on insect prostaglandins study will give the most lectures. Introduce the discovery, biosynthesis, and biological functions of prostaglandins in insects. (II) ’08-2
Prerequisite: n/a
URL: n/a

632EU1150
Research Methods in Ecology
Lecture/Laboratory – 3hr/3cr. Toshinori Okuyama
Generalized Linear Mixed Model. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972design_analysis

632EU1170
Social Insects
Lecture - 2hr/2cr. En-Cheng Yang
(I) ’09-1
Prerequisite: n/a
URL: n/a

632EU1190
Ecological Modeling
Lecture - 3hr/3cr. Toshinori Okuyama
(I) ’09-1
Prerequisite: n/a
URL: n/a

633 U1070
Molecular Mycology
Seminar - 2hr/2cr. Wei-Chiang Shen
In this course, we will introduce the model organisms in molecular mycology research. We will cover the basic genetic concepts and methods in fungal molecular biology. We will also review and discuss several important signaling pathways in different fungal model systems. Each student will need to choose one current research paper from one of the topics discussed in the class to give a formal oral presentation. Students are also required to submit a small research proposal based on their own interests. Oral presentation and final research proposal of particular topics are also required. (II) ’07-2
Prerequisite: Students who are willing to take this course should have basic mycology and molecular biology knowledge.
URL: n/a

633 U1080
Current Topics in Molecular Mycology
Discussion - 1hr/1cr. Wei-Chiang Shen
The goal of this course is to introduce students the important or current research in molecular mycology. This course is a one credit hour course and will meet two hours each time for eight weeks. Seniors or graduate level students who are interested in Molecular Mycology are encouraged to participate in this class. The course is designed as a journal discussion class and individual student is required to pick the topics of their own interests and leads the discussion in the class. The grade will be determined by the performance of presentation and class participation. (II) ’07-2
Prerequisite: Students are preferred to have basic knowledge of mycology and molecular genetics.
URL: n/a

633EU0800
Noninfectious Plant Diseases
Lecture/ Laboratory – 2hr/2cr. En-Jang Sun
Non-infectious plant diseases that are caused by non-biotic factors including light
disorder, temperature disorder, water disorder, etc. The injury mechanism, plant responses, effects and symptoms caused by them will be introduced. The adaptation and resistance of plants to these stresses; the application of these knowledge in agro-industries are also included. (II) '07-2, '08-2

Prerequisite: n/a
URL: n/a

633EU1070
Molecular Mycology
Lecture – 2cr. Wei-Chiang Shen

(II) '07-2
Prerequisite: n/a
URL: n/a

633EU1080
Current Topics of Molecular Mycology
Lecture – 1cr. Wei-Chiang Shen

(II) '07-2
Prerequisite: n/a
URL: n/a

633EU1180
Current Topics in Cell Biology
Lecture/ Discussion - 3hr/3cr. Tang-Long Shen

Include current outstanding and hallmarked papers and literatures in every specific field discussed. Introduce general cell signal transduction machineries and several basic cellular functions such as endocytosis, exocytosis, cell cycle progression, cell migration. (I) '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971specialcellbiolog

633EU1230
Molecular and Cell Biology
Lecture - 2hr/2cr. Tang-Long Shen

Understand life on the molecular and cellular level, comprehend the biological processes and the fundamentals of structural and functional genetics. Organized into presentations and discussions, and utilizes the latest communication technology to connect live with Kyoto University to bring together the two schools in a synergetic learning environment. (I) '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971MCB

633EU1260
Cellular Network of Biological Molecules
Lecture/Laboratory/Discussion – 2hr/2cr. Tang- Long Shen

An intensive course to introduce the underlying cell signaling pathways and their mediators covering mammalian cells, plants and microbes. (II) '07-2, '08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972signaling

641EM1130
Food Carbohydrates
Lecture - 2hr/2cr. Ting-Jang Lu

The contents of this course includes: Occurrence of carbohydrates, nomenclature of carbohydrates, structure of sugars, reactions of sugars, properties of disaccharides and oligosaccharides, Maillard reaction, chemical structures of polysaccharides, analytical techniques of polysaccharides, food application of polysaccharides and starch. (I) '09-1

Prerequisite: Organic Chemistry or Biochemistry
URL: n/a

641EM1150
Food Proteins
Lecture - 2hr/2cr. Shu-Chen Hsieh

The contents are composed of two parts. Before the mid-term, we plan to introduce the structure of protein, denaturation and renaturation of protein, the measurements of protein structure, nutrition of protein, current protein technology, protein interfacial properties, and food enzymology. After the mid-term special topics on food proteins will be concluded, including milk, egg, muscle,
soy, animal by-product, fish, genetic modified food, cereal, seed, and functional food proteins. (I) '09-1
Prerequisite: Food Chemistry or Biochemistry
URL: n/a

641EM1200
Special Topics on Food Polysaccharides
Discussion – 2hr/2cr. Ting-Jang Lu
Group discussion: Chemical and physical properties of assigned polysaccharides, experimental design, principle of analytical instruments and methods, data interpretation, possible extended research subjects. (II) '07-2, '08-2
Prerequisite: Basic carbohydrate chemistry knowledge.
URL: https://ceiba.ntu.edu.tw/972_Food_Polysacch

641EM2120
Refrigeration and Freezing of Foods
Lecture – 2hr/2cr. (James) Swi-Bea Wu
Principles and methods of refrigeration, mechanical refrigeration system and its components, load calculation, psychrometric chart, Mollier diagram, sizing of equipment, food refrigeration systems, food quality changes in refrigeration and freezing, prediction of food freezing time and temperature, thawing of foods, etc. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972foodrefrigeration

641EM2130
Thermal Processing of Foods
Lecture - 2hr/2cr. Swi-Bea Wu
The principle and methods of food sterilization and preservation and the design of thermal processing systems. Topics include "containers", "canning operations", "sterilization equipment", "process evaluation", "quality retention", "aseptic processing", etc. (I) '09-1
Prerequisite: Food Processing or equivalent
URL: n/a

641EM2160
Separation Technology in Food Processing
Lecture/Discussion – 2hr/2cr. Been-Huang Chiang
Introduce and discuss the separation techniques which are widely used in food processing. 1) Basic concept of mass transfer. 2) Food processing related separation techniques. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972food_separation

642ED0020
Epigenetics
Lecture - 3hr/3cr. Shau-Ping Lin and Shih-Shun Lin
We introduce the phenomenon and mechanisms of Epigenetics in normal physiological conditions as well as diseases symptoms in animals/human and plant. These includes: DNA methylation and genome defense; RNAi and heterochromatin; Evolution of mammalian epigenetic control systems; Epigenetics and development; Epigentics and human disease; x-inactivation; Genomic imprinting in mammals; Genomic imprinting in plants; Epigentics and reprogramming; Epigenetic in assisted reproductive techniques; Applied epigenetics: Flowering plants and tissue engineering. (I) '08-1, '09-1
Prerequisite: n/a
URL: n/a

642ED0030
Stem Cell Biology
Lecture - 3hr/3cr. Hsuan-Shu Lee
**642ED0040**

**Structural Biology & Bioinformatics**  
Lecture - 3hr/3cr. Chii-Shen Yang, Mong-Hsun Tsai

The goal of this class is to let students learn modern structural biology, including its importance, and its future development. Part of the contents in this course will be overlapped with “Biophysics (B02 30100)”, “Proteomics (P05 U9120), and “Bioinformatics (P05 U9140)”. The global view of structure biology is the key concept in our course design. In addition, the main topics in the field will be discussed in great depth about their recent development, the new theories, approaches, and successful examples. After the class, students will have the best understanding on newest structure biology information. (I) ’08-1, ’09-1

Prerequisite: Biochemistry  
URL: n/a

**642ED0050**

**Immunological Techniques: Antibody Tools**  
Lecture - 3hr/3cr. Rong-Huay Juang

The course will be focused on antibody, especially on induction of antibodies, their molecular evolution, methodologies of antibody preparation, and applications of antibodies. The content on experiment course will include the preparation of traditional antiserums and monoclonal antibodies. Students will also have the chance to observe the production process of IgY produced from chicken eggs. Graduate students are encouraged to prepare their own antigens, and use them in the experiment course. When finishing the course, students will have their own antibodies.

Aims of the course:
1. Understand the basic immunology, and the mechanisms of antibody generation
2. Explore the tools in antibody preparation, and their potential applications
3. Make the students of this course connect their research with the course and produce useful antibodies
4. Promote antibody technologies to improve the depth of student’s research in our Institute. (II) ’07-2, ’08-2

Prerequisite: Students should have finished “Biochemistry” and “Biochemistry experiment” courses, and students who finished “Immunology” course are highly encouraged.  
URL: https://ceiba.ntu.edu.tw/971MB

**642ED0060**

**Transgenic and Cloning Technology in Animal**  
Lecture - 3hr/3cr. Li-Ying Sung

Animal transgenesis and nuclear transfer (NT) technologies are powerful tools for understanding the cellular and molecular aspects of gene expression in embryo development. This course will provide students a state of the art of animal transgenesis, somatic cell nuclear cloning and embryonic stem cell (ESC) research, as well as its applications and ethic concerns. Students will be asked to present in particular topic they were assign after extensive review and discussion. Lab demonstration will be involved in this course as necessary.


Prerequisite: n/a  
URL: n/a

**642ED0070**

**Special Topics in Plant Biotechnology**  
Lecture / Discussion – 3hr/3cr. Jen-Chih Chen, Shih-Shun Lin

In this course students will have the opportunity to learn the most up to date
technologies, the challenges and potential solutions for agriculture, and the future aspect for this field. GMO issue and other bio-safety issues will also be emphasized. The course is designed to have two hour lectures and followed by one hour discussion. Students will discuss, and propose questions in related to plant biotechnology. Logical thinking, creativity, and communication will be emphasized and encouraged in this class. Students will need to prepare for an oral report as well as a project proposal. (II) '07-2

Prerequisite: n/a
URL: n/a

642ED0080
Special Topics in Microbiology
Lecture / Discussion – 3hr/3cr. Je-Ruei Liu, Chi-Te Liu

The principles of this course are to provide a critical evaluation of the current state of knowledge concerning microbial biotechnology. This course will investigate the microbes in agribiotechnology, medical biotechnology, environmental biotechnology, as well as implication of microbial biotechnology in protein and enzyme production. (II) '07-2, '08-2

Prerequisite: n/a
URL: n/a

642ED0120
Frontiers in Biotechnology (I)
Discussion - 2 hr/ 1 cr. Conducted by faculties in Institute for Biotechnology

A seminar based course given by our full time and joint faculties as well as some invited speakers. The aim of this course is to introduce to our new PhD students the most updated research achievements in our full time/joint faculties’ lab and in the field in general. Provide a platform for in-depth discussion between students and faculties, especially among the several fields inside Biotechnology. (I) '08-1, '09-1

Prerequisite: n/a (only open to PhD students)
URL: n/a

642ED0130
Frontiers in Biotechnology (II)
Lecture – 1hr/1cr. Conducted by faculties in Center for Biotechnology

A seminar based course given by our full time and joint faculties as well as some invited speakers. Introduce to our new PhD students the most updated research achievements in our faculties’ lab and in the field in general. (II) '07-2, '08-2

Prerequisite: n/a (only open to PhD students)
URL: n/a

642ED0140
Frontiers in Epigenetic Regulatory Mechanisms
Lecture/Laboratory - 2hr/2cr. Sau-Ping Lin

Around 1/3 of the lectures will be given by the instructor for introducing basic concepts in epigenetic regulation of gene silencing, including DNA methylation, modification of chromatin packaging proteins and functional non-coding RNAs. The rest of the classes, students will be assigned the most updated original research papers and conference articles as well as the milestone publications. (I) '08-1, '09-1

Prerequisite: n/a (only open to PhD students)
URL: n/a

642ED0150
Special Topics in Stem Cell Application
Lecture - 2hr/2cr. Hsuan-Shu Lee


Prerequisite: Stem Cell Biology
URL: n/a

642ED0160
Frontiers in Functional Non-Coding RNAs
Lecture – 2hr/2cr. Sau-Ping Lin, Shih-Shun
Basic concepts of non-coding RNA related Regulatory Mechanisms, keeping abreast of the most updated research internationally, develop the ability to critically evaluate and interpret published research articles, the art of reviewing and defending a manuscript for publication. (II) ’07-2, ’08-2
Prerequisite: n/a (only open to PhD students)
URL: n/a

642ED0170
Special topics in regenerative medicine
Seminar – 2hr/2cr. Hsuan-Shu Lee
(I) ’07-2
Prerequisite: Regenerative Medicine
URL: n/a

642ED0180
Advanced Small RNA and Mechanism of Gene Silencing
Lecture - 3hr/3cr. Shih-Shun Lin
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. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

642ED0190
Special Topics in Microbes and Environmental Issues
Lecture Chi-Te Liu
The goal of this course is to let students acquire up-to-date knowledge on microbial solutions for environmental problems, including bioremediation, biodegradation, biotransformation, and biogeochemistry. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

642ED0200
Special Topics in Microbial Gene Regulation and Expression
Lecture - 3hr/3cr. Je-Ruei Liu
This course is to provide a critical evaluation of the current state of knowledge concerning microbial gene regulation and expression. It covers the gene structure and the expression of genes in microbial systems, and also the structure of polycistronic operons, the regulation of expression, induction and repression, translational control, integration of expression with metabolic pathways. (I) ’09-1
Prerequisite: n/a
URL: n/a

642EM0020
Production of Recombinant Proteins
Lecture - 2hr/2cr. Je-Ruei Liu
The course is aimed at providing a comprehensive view of the newly identified and defined recombinant protein production systems, including the two Gram-negative organisms (E. coli and Pseudomonas fluorescens), the Gram-positive Staphylococcus carnosus, four yeast species (Arxula adeninivorans, Hansenula polymorpha, Pichia pastoris and Yarrowia lipolytica), and the two filamentous fungi Aspergillus sojae and Sordaria macrospora. The description of these microbial platforms is further supplemented by an overview on expression in mammalian and plant cells. (II) ’09-1
Prerequisite: n/a
URL: n/a

642EM0030
Regenerative Medicine
Lecture – 2hr/2cr. Hsuan-Shu Lee
Introduce basic concepts, potential, techniques, and progress in currently developing “Regenerative Medicine”. Students will learn to interpret and evaluate published articles or presentations and gain
a great vision on current trends of investigations in this field to lead their own research. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

642EM0040
Special Topic in Microarray Technologies
Lecture/Discuss – 2hr/2cr. Mong-Hsun Tsai
This course will introduce and discuss the basic concepts, potential, techniques, and progress in microarray related technologies including gene expression, aCGH, SNP, and microRNA. Students will group discuss and present the published articles and gain a great vision on current trends of investigations in this field to lead their own research. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

642EM0050
Special Topics in Micorbial Biotechnology
Seminar – 3hr/3cr. Je-Ruei Liu
The principles of this course are to provide a critical evaluation of the current state of knowledge concerning microbial biotechnology. This course will investigate the microbes in agribiotechnology, medical biotechnology, environmental biotechnology, as well as implication of microbial biotechnology in protein and enzyme production. (I) '08-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971MB

642EM0060
Special Topics in Environment Microbial Engineering
Lecture - 3hr/3cr. Chi-Te Liu
The goal of this course is to let students acquire knowledge of the diverse roles that microorganisms play in biological transformations in our environment. Microbial populations are a key component of terrestrial and aquatic ecosystems and are responsible for mediating a number of important functions, including nutrient cycling and biogeochemical transformations. Molecular biology tools now allow us to describe the diversity and structure of microbial communities in natural systems, and relate these to environmental drivers and ecosystem function. There is a major emphasis on the application of "omics" approaches to determine the identities and functions of microbes inhabiting different environments. (I) '09-1
Prerequisite: Molecular biology or equivalent
URL: n/a

642EM0070
Molecular Signal Transduction in Plant-Microbe Interactions
Lecture - 2hr/2cr. Chi-Te Liu
Through this course, students can acquire knowledge of molecular processes underlying interactions between plants and pathogens or symbiotants. In addition, they can also address the soluble strategies for the great issue of crop protection by unraveling the molecular basis of disease resistance pathways. (I) '08-1
Prerequisite: Fundamental knowledge of molecular biology and biochemistry
URL: n/a

642EU0040
Special Topic in Reprogramming
Lecture/Seminar – 2hr/2cr. Shau-Pin Lin, Li-Ying Sung
Depends on the background of the students, 2/3 to 3/4 of the lectures will be given by the instructors for introducing basic concepts in all aspects of cellular reprogramming, including somatic cell nuclear transfer, stem cell differentiation and the application in regenerative medicine. For the rest of the classes, students will be assigned the most updated original research papers as well as the milestone publications. They will be randomly divided into 2 groups for each assignment. One group will be presenting the articles and students in the other group are expected to challenge the papers from the experimental design, the methodology to the interpretation of the data. Students in the 1st group should defend for the papers as if it's their manuscript. Students from the 2nd group should also provide constructive advice as how to improve the manuscript so
that it can be published in a higher impact journal. (II) '07-2
Prerequisite: n/a
URL: n/a

642EU0050
Introduction of Biochip
Lecture - 3hr/3cr. Mong-Hsun Tsai
1. Introduction to microarray analysis. 2-3
Introduction to chemistry and biochemistry. 4.
Genes and genomes. 5. Microarray surfaces.
17. Future trends: chips in the clinics. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971biochip

642EU0060
Seminars in Bioinformatics and Biochip
Discussion - 2hr/2cr. Mong-Hsun Tsai
1. Introduction of bioinformatics; 2.
Statistical data analysis; 6. Introduction of biological databases; 7. Introduction of biological web-services. (I) '08-1
Prerequisite: n/a
URL: n/a

642EU0070
Genetics and Epigenetics in Germ and Stem Cells
Lecture 2hr/2cr. Sau-Ping Lin
Basic concepts in Gametogenesis, Stem cells and the regulation of these processes by genetics and Epigenetics will be introduced. Germ cell specification and differentiation process marks the most dramatic physiological reprogramming event that restore the totipotency potential in the germ cells in order to achieve full development after fertilization. It’s therefore the best model to study programming events that have implication in stem cell related regenerative medicine. Most updated original research papers as well as the milestone publications will be chosen to discuss in the class. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

642EU0080
Microarray Experiment and Data Analysis
Lecture / Laboratory - 3hr/3cr. Mong-Hsun Tsai
Introduce basic concepts and techniques of “Microarray experiment and data analysis,” hand-on experiments for students to learn how to make microarray chips, microarray hybridization and microarray data analysis. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972microarraylab

642EU0100
Advanced Animal Biotechnology
Lecture/Discussion - 3hr/3cr. Li-Ying Sung
This course is 1) to provide students with an overview of recent developments in animal biotechnology; 2) to improve 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. Lecturer will meet with all students individually several times during their literature search, preparation of presentation outline and presentation practice. Guest speakers will plan to invite for the lectures as necessary.

Prerequisite: n/a
URL: n/a

642EU0110
Frontiers in Plant Molecular Breeding

Seminar/Discussion—2hr/2cr. Jen-Chih Chen

This course will be focused on the techniques used in plant molecular breeding, including plant tissue culture, Marker-assisted breeding, transgenic techniques, and GMO issues. The class will be conducted in a discussion format. In each week, selected research articles in a specific topic will be discussed. Students will have the chance to learn experimental designs and scientific writing from discussed articles. (II) '07-2

Prerequisite: n/a
URL: n/a
College of Management (91)

Contact Info:
Ms. Yi-Ling Hong (elin@management.ntu.edu.tw)
Office Of International Affairs / College Of Management

701E19000
Management Science Model
Lecture – 3hr/3cr. Jiun-Yu Yu
Solve the decision making problems that confront and confound managers in both public and private sectors by developing mathematic models of these problems. (II) ’08-2
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://140.112.110.2/webx?50@81.1WA7ar0Lqp9.6@.21d1d39b

701E21500
Operations Management
Lecture - 3hr/3cr. Chia Wei Guo
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972om

701E32100
Accounting for Managerial Decisions
Lecture – 3hr/3cr. Chih-Yang Tseng
Introduce the modern concepts of managerial accounting. Students are expected to learn: (1) The fundamentals of managerial accounting information systems; (2) The application of accounting information for planning and control decisions; & (3) The emerging roles of managerial accounting.(I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971AMD01

702E10111
Accounting (A)
Lecture – 3hr/3cr. Ta-Wei David Wang
This course is designed primarily for non-accounting major students. The objectives of the course are to help students (1) understand what accounting information is, and (2) interpret the information in financial reports. To meet these objectives, the course starts with the reasoning and the processes used to generate, record, aggregate, and report financial information. Following that, the course introduces the primary financial statements and discusses the important elements in financial statements. Finally, the course focuses on the importance of financial statement information, despite its limitations, in interpreting the performance of organizations. (I)(II) ’08-2, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981acc1

702E12020
Business Application Software
Lecture – 3hr/3cr. Chun-Shuo Chen
This course focuses on what matter most to today’s students, what tasks students can accomplish with their computers (information systems), and what skills they can apply immediately in the workplace, the classroom, and at home. The course is also designed based on the next technology trend and the material students want to learn while teaching the material students need to learn.(I) ’09-1
Prerequisite: n/a
This course is designed to develop an in-depth understanding of the concepts, principles, and practices of financial accounting, emphasize on understanding and applying basic accounting principles and other concepts that guide the reporting of the effect of transactions and other economic events on the financial condition and operating results of a business. (I)(II) ‘08-1, ‘08-2, ‘09-1

Prerequisite: Accounting/ Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/972intermediate2
http://ceiba.ntu.edu.tw/972intermediate3

This course continues to discuss several topics in intermediate accounting including revenue recognition, income taxes, pensions, leases, and accounting changes and error analysis. When discussing these topics, this course focuses on the accounting standard issued by Accounting Research and Development Foundation in Taiwan, FASB and IASB. Lastly, this course will cover some newly announced financial accounting standards. (I) ‘09-1

Prerequisite: Accounting
URL: http://ceiba.ntu.edu.tw/981inter3

Advanced accounting includes a variety of interesting topics in financial accounting, such as business combination, multinational corporations, partnerships, and corporate liquidations. (I)(II) ‘07-2, ‘08-1, ‘08-2, ‘09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: https://ceiba.ntu.edu.tw/971ac3
http://ceiba.ntu.edu.tw/972AC3

702E30401
Cost and Managerial Accounting
Lecture – 3hr/3cr. Chih-Hsieh Liao
This course focuses on various cost accounting systems and how cost information is applied in an organization’s internal management. Cost accounting systems provide valuable information for management planning, control and performance evaluation. Managers rely on accurate cost information to make a variety of decisions, including pricing, budgeting, sales mix, capacity management, and performance measurement. Through both lectures and case discussions, this course highlights important cost accounting systems and their roles in managerial settings. (I)(II) ‘08-1, ‘08-2, ‘09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981costaccting01

This is often the case that the fullest understanding of the models comes by calculating them, and Excel is one of the most accessible and powerful tools available for this purpose. The objective of this course is to develop student’s ability to solve finance problems and estimate financial models in the areas of corporate finance, investment, and derivatives by using Excel. This is an effective learning-by-doing course. (I) ‘09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981excel

Advanced accounting includes a variety of interesting topics in financial accounting, such as business combination, multinational corporations, partnerships, and corporate liquidations. (I)(II) ‘07-2, ‘08-1, ‘08-2, ‘09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: https://ceiba.ntu.edu.tw/971ac3
http://ceiba.ntu.edu.tw/972AC3

703E15000
The Application of Financial Modeling
Lecture – 3hr/3cr. Wen-I Chuang
It is often the case that the fullest understanding of the models comes by calculating them, and Excel is one of the most accessible and powerful tools available for this purpose. The objective of this course is to develop student’s ability to solve finance problems and estimate financial models in the areas of corporate finance, investment, and derivatives by using Excel. This is an effective learning-by-doing course. (I) ‘09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981excel

703E30900
Financial Statement Analysis
Lecture – 3hr/3cr. Keng-Yu Ho
Financial statement analysis and corporate valuation, how valuations are actually done in the real world, accounting, finance, and business strategy concepts are needed. (II) '07-2, '08-2

Prerequisite: Accounting (A); Accounting Principles; Financial management/ Limited to students from within this department (including students taking minor and dual degree program)
URL: https://ceiba.ntu.edu.tw/972FSA_NTU_FIN

703E42110
Management of Financial Institutions
Lecture – 3hr/3cr. Chung-Hua Shen


Prerequisite: n/a
URL: n/a

704E11400
Introduction to International Business
Lecture – 3hr/3cr. Yung-Chih Lien

This course is aimed to introduce the essences of a business and also to stimulate students' understanding on how the business to overcome the challenges of globalization. Students take this course will have the chance to know many exciting and challenging facets of business, including what is business, how business operates successfully, how it affects people and society, and in what way the business can survive in the international context. (II) '08-2

Prerequisite: Limited to students from within this department whose student I.D. ends in an "even" number/ Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/972interbusiness02

704E20400
Mathematics for Management
Lecture – 3hr/3cr. Jr-Yan Wang

Basics of the linear algebra and the knowledge of the linear algebra, several techniques to deal with management problems are discussed : the linear programming, the least squares regression, the Markov process, and the Monte Carlo simulation. (I) '08-1, '09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

704 30800
International Marketing Management
Lecture – 3hr/3cr. J. Chris Lin

An overview of international marketing as a managerial challenge, from a conceptual, theoretical, practical and analytical perspective, ability of working problems, cases and projects out as a team. (II) '07-2, '08-2

Prerequisite: Marketing management
URL: n/a
### 704E32400
**Investments**

Lecture – 3hr/3cr. **Jr-Yan Wang**

Background knowledge of the organization of various securities markets, the principles of portfolio construction (e.g. the Portfolio Theory), survey the valuation and risk-management principles for bonds, stocks, or options (e.g. the CAPM, the Arbitrage Pricing Theory, and the Black-Sholes option pricing formula). (I) ’08-1, ’09-1

Prerequisite: n/a  
URL: http://www.im.ntu.edu.tw/~paton/

### 705E11100
**Management Mathematics**

Lecture – 3hr/3cr. **K.L. Huang**

Introduce important topics in Management Mathematics: linear equations, matrix algebra, linear programming, financial mathematics, logic, sets and counting, Markov systems, and etc. (I) ’08-1, ’09-1

Prerequisite: n/a  
URL: n/a  
URL: http://ceiba.ntu.edu.tw/981mm

### 705E13200
**Management**

Lecture – 3hr/3cr. **Wei-Yuan Hsu**

Introduce the fundamental concepts of management strategies and techniques. Assists students to learn various management practices and how such practices might impact on the operation of organizations in the global marketplace. Topics: evolution of management thought, leadership, human resource management and organizational culture. (I) ’08-1, ’09-1

Prerequisite: n/a  
URL: n/a

### 705E20300
**Operating Systems**

Lecture – 3hr/3cr. **Chien Chin Chen**

Process management, process coordination, memory management, system structures and organizations. (II) ’07-2, ’08-2

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)  
URL: http://www.im.ntu.edu.tw/~paton/

### 705E21200
**Data Structures**

Lecture – 3hr/3cr. **Chien Chin Chen**

The course introduces and develops methods for designing and implementing abstract data types using the C++ programming language. The main focus is on the object-oriented design and programming in problem solving, and the fundamental concepts, tools and techniques in the design of data structures and associated operations. (I) ’09-1

Prerequisite: Program Design  
URL: http://ceiba.ntu.edu.tw/981datastructure

### 705E31200
**Information System Analysis and Design**

Lecture – 3hr/3cr. **Carol Hsu**

1) Determine what systems to pursue and developing the business justifications for the system, including problem identification and scope. 2) Learn how to gather the information required to develop the new system, including questionnaire, interviews, document analysis. 3) Document the gathered information into standard formats used in system analysis such as Use Cases and Class Diagrams. (II) ’07-2, ’08-2

Prerequisite: n/a  
URL: n/a

### 705E31700
**Project on Information Management**

Seminar – 2hr/2cr. **Ming-Hui Huang**

First Semester: 1. Read Ec-Related papers and cases. 2. Make weekly presentations. 3. Write an EC company case as the term paper. Second Semester: 1. Develop and EC business Plan. 2. Build a website for the business plan (I)(II) ’08-1, ’08-2, ’09-1

Prerequisite: n/a  
URL: n/a

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705E32100
Operations Research
Lecture – 3hr/3cr. K. L. Huang

Constructing mathematical models for decision-making problems: production planning, inventory management, portfolio selection, transportation and assignment problems, project management, covering and location problem, network flow models. (II) ’07-2, ’08-2

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

705 E33100
Marketing Management
Lecture – 3hr/3cr. Ming-Hua Hunag

This course is offered for Information Systems majors, and the focus is on the electronic aspect of marketing. Electronic marketing (e-marketing) is an area of study that combines marketing strategy with information technologies. It is one of the most significant developments in marketing in decades and represents an extremely dynamic area. E-marketing specifically addresses those marketing exchanges that are carried out, fully or partially, in an electronically networked marketplace. (II) ’07-2, ’08-2

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

722ED2000
Seminar In Management
Accounting Theory (I)
Lecture – 3hr/3cr. Shu-Hsin Li

The purpose of this course is to introduce doctoral students to the fundamental and recent managerial accounting research, with a goal that students can extend class materials into publishable papers. (II) ’07-2

Prerequisite: n/a
URL: n/a

722ED5030
Analytical and Behavioral Research in Accounting
Lecture – 2cr. Rong-Ruey Duh, Shu-Hsing Li.

Various methods exist for conducting empirical accounting research. While many researchers use field-archival data for empirical investigations, other alternatives such as analytical methods, case studies, survey research, and laboratory experiments can be adopted. In this course, we will offer students with a different perspective on how to formulate an accounting research in an analytical setting and derive the meaningful accounting insights and theories, and how an empirical research can be conducted with data coming from survey or experiments. Students are expected to broaden their perspective and open their mind in doing accounting research. They also are expected to be flexible in using various methods to examine interesting and important accounting issues. Confining one’s research skill to the filed-archival method can have two undesirable consequences. One is that an important issue cannot be investigated when field-archival data are not available. The other is limiting the review of literature to only a subset rather than a complete set due to inability to appreciate research using other methods.

Prerequisite: n/a
URL: n/a

722ED5040
Analytical and Behavioral Research in Accounting
Seminar – 2hr/2cr. Rung-Ruey Duh

(I)(II) ’08-2, ’09-1

Prerequisite: n/a
URL: n/a

722ED5110
Empirical Research in Accounting
Seminar – 3hr/3cr. Chan Jane Lin

(I) ’08-1, ’09-1

Prerequisite: n/a
The purpose of this course is to introduce doctoral students to a wide range of research topics in accounting research through presentation of recent working papers by department faculty and guest speakers. (II) ’07-2, ’08-2, ’09-1

Prerequisite: n/a
URL: n/a

722ED7000
Thesis Writing
Lecture – 3cr.

This course is one of the two Thesis Writing courses that accounting doctoral students are required to take. The main purpose of this course is to help students smoothly conduct their research projects. Students are expected to have their research topics ready before they start taking the first thesis writing course, and are required to complete the project while finishing their second writing course.

Prerequisite: n/a
URL: n/a

722EM0100
Accounting Research and Writing
Lecture – 3hr/3cr. Chih-Yang Tseng

Process of designing, conducting, analyzing, interpreting, writing and presenting empirical studies in accounting. (II) ’08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972ARWP

722EM1300
Advanced Financial Accounting Theory
Lecture – 3hr/3cr. Shu Yeh

This course equips students with the knowledge and tool to analyze the implication of financial reporting for the operation of our economy. This course equips students with the knowledge and tool to analyze the implication of financial reporting for the operation of our economy. (II) ’07-2, ’08-2

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972FAtheory
http://ceiba.ntu.edu.tw/962FAT

722EM1320
Introduction to Empirical Research Methods for Accounting
Lecture – 3hr/3cr. Wen-Hsin Hsu

(I) ’08-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971workshop

722EM4110
Issue in Auditing Research
Lecture – 3hr/3cr. Yao-Tsung Chen

Discuss a broad range of audit research papers designed to expose you to some of the major research areas in auditing, with an emphasis on empirical research. The selected papers are designed to be representative or latest of the related issues, and demonstrate the development of research in the area. (II) ’07-2

Prerequisite: n/a
URL: n/a

722EM6000
Econometrics
Lecture – 3hr/3cr. Samuel Shui-Liang Tung

The course will use an innovative approach to the understanding of elementary econometrics. It covers the topic of single-equation linear regression analysis in an easily understandable format that focuses on real-world problems. (I) ’07-2, ’08-2, ’09-1

Prerequisite: n/a.
URL: http://ceiba.ntu.edu.tw/981tung_econometrics
722EM9000
Accounting and Taxation for Financial Instruments
Lecture – 3hr/3cr. Yann Ching Tsai

Prerequisite: Intermediate Accounting
URL: http://ceiba.ntu.edu.tw/972_722M9000

722EU1000
Seminar in Financial Statement Analysis
Lecture – 3hr/3cr. Samuel Shui-Liang Tung

The ability to use financial statements and to communicate effectively and efficiently is important for a business student’s career. This course is designed to meet students’ needs in these areas. Although most books present financial statement analysis from the point of view of the primary users of financial statements (equity and credit analysts), the analysis and use of financial statements are not restricted to analysts. Managers, auditors, educators and regulators can also benefit from the efficient and effective use of financial statements. (II) ’08-2

Prerequisite: n/a
URL: n/a

722EU4000
Advanced Auditing
Lecture – 3hr/3cr. Che Nen Ko

This course helps students understand strategic-systems models by which assurance professionals assess and evaluate assurance-related risks and evidence. (I) ’08-1, ’09-1

Prerequisite: n/a
URL: n/a

722EU4200
Computer Security and Auditing
Lecture -3hr/3cr. Chih-Yang Tseng

This course is intended to provide a sound guide for dealing with the economic and financial aspects of computer security. Over the last decade, it has become clear to us that the rapid growth of information technology in general, and specifically the Internet, demands that managerial decisions to reflect the reality of digital economy. Chief among these realities is the growing importance of computer security. Therefore, from managerial accounting’s view, this course is focused on managing the resources related to computer security. (II) ’07-2

Prerequisite: n/a
URL: n/a

722EU8010
Enterprise Risk Management
Lecture – 3hr/3cr. Chih-Yang Tseng

Better protect and enhance shareholder value through value-focused Enterprise Risk Management (ERM), identify excessive risk exposure, develop ways to manage enterprise risk, delineate clear roles for the board, senior executives, chief risk officers, internal auditors, and risk management staff. (II) ’07-2, ’08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972ERM http://ceiba.ntu.edu.tw/962ERM

723ED0500
Seminar on Finance
Seminar – 3hr/3cr. Wei-I Chuang

(I)(II) ’08-2, ’09-1

Prerequisite: n/a
URL: http://www.fin.ntu.edu.tw/

723ED4610
Seminar on Capital Market
Seminar – 3hr/3cr. Pai-Ta Shih

(I) ’08-1, ’09-1

Prerequisite: n/a
URL: n/a

723ED7010
Financial Time Series
Seminar – 3hr/3cr. Yaw-Huei Wang

This course is about the econometric analysis of financial time series. We will
cover some popular and useful methods and their empirical applications. These methods include ARIMA processes, GARCH models, stochastic volatility models, and continuous-time models. If time is allowed, we will also look at copula methods and their applications in finance. (I)(II) '08-2,'09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981FinTimeSeries

723ED7100

Empirical Financial Econometrics
Lecture – 3hr/3cr. Chung-Ming Kuan

Introduce econometric methods readily applied to finance topics, emphasize on the methodology and discuss the properties. (II) '08-2
Prerequisite: Students who wish to take this course are expected to have completed the Ph.D. econometrics core courses in this Department.
URL: https://ceiba.ntu.edu.tw/972FEMA

723 M1020

Seminar on Investment Banking
Seminar – 3hr/3cr. Dr. Yong-chern Su

Introduce modern investment banking theory: investment bank reputation theory, strategic venturing theory, underwriting theory, LAPM, information asymmetry and order imbalance theory, nesting GARCH theory, GARCH option pricing theory, LBO theory, and spin-off theory. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

723EM1850

Market Risk Management
Seminar – 3hr/3cr. Yaw-Huei Wang

This course is about how to measure and manage market risks. We will cover both the conventional value-at-risk (VaR) and the coherent risk analyses. Participants are expected to have taken Financial Management or Investment Analysis. It would be even better if participants are familiar to Econometrics and basic Matlab programming skills. (I) '08-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971marketrisk

723EM2200

Investment Management
Lecture – 3hr/3cr. Yong Chern Su

(I) '08-1, '09-1
Prerequisite: Limited to master's degree students and beyond
URL: n/a

723EM3300

Financial Management
Lecture – 3hr/3cr. Chung-Hua Shen

(I) '08-1, '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

723EM4700

Project on Real Option
Lecture – 3hr/3cr. Pai-Ta Shih

By apply mathematical techniques from financial option pricing, it can deal with the optimal managerial decisions in a world of uncertainty and quantifying the value of managerial flexibility. (II) '08-2
Prerequisite: n/a
URL: n/a

723EM6000

Financial Innovations
Seminar – 3hr/3cr. San Lin Chung

(I) '08-1
Prerequisite: n/a
URL: n/a

723EM9700

Continuous-Time Finance
Lecture – 3hr/3cr. Y.H. Wang

Introduction to the arbitrage theory in continuous time and in particular to pricing and hedging theories for financial derivatives,
also contain an introduction to stochastic differential equations (SDEs) and Ito calculus. (II) '07-2, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/766100/index.htm

723EM9000
Quantitative Analysis
Lecture – 3hr/3cr. Keng-Yu Ho
This course is a graduate level course of quantitative analysis for non-economics major students. The course is divided into two parts. The first part covers lectures on the required text book and may also include certain demonstration based on Stata software. The second part introduces two major empirical topics in finance with journal article readings. There will also be a group project (8-10 groups, detailed later) based on Stata software (or any software of your own choice) and a final exam. (I) '08-1, '09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981QA_NTU_FIN

723EU6500
Asset Management
Seminar – 3hr/3cr. Shean Bii Chiu
Asset management includes mutual fund management, pension fund management and discretionary account management. Main purposes of this course are to teach the fundamentals of asset management as well as to introduce the recent trends and developments in the asset management industry. (I) '08-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/971assetmgmt

724EM0400
International Marketing Management
Lecture – 3hr/3cr. Jiun-Sheng Lin
This course examines the challenges of entering and operating effectively in foreign markets. Decisions must be made regarding international marketing objectives, strategies and policies, foreign market selection, adaptation of products, distribution channels and communications to fit each foreign market, and systems of international marketing organization, information gathering, planning and control. These topics, along with exploration of cultural issues, are examined through reading, case discussion, class presentations and a term project. It covers the main issues faced in strategic, tactical, and administrative international marketing. (I)(II) '08-1, '08-2, '09-1
Prerequisite: Marketing Management
URL: n/a
724 M0050
Strategic Management of Technological innovation
Lecture – 3hr/3cr. Hsueh-Liang Wu

A strategic framework for managing technology and innovation: dynamics of innovation, formulation and implementation of technological innovation strategy, and highlight global competition whenever possible. (II) ’07-2, ’08-2

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://www.management.ntu.edu.tw/~hlwu/

724 M0060
Managerial Accounting
Lecture – 3hr/3cr. Lien, Yung-Chih
Course Aims: 1. define managerial accounting and describe its role in the management process 2. explain what is meant by the word “cost” 3. explain how an “activity-based costing” (ABC) system operates 4. explain the concept of “activity-based management” (ABM) 5. explain the concept of activity-based “budgeting” 6. describe the “balanced scorecard” concept. (II) ’08-1, ’09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971accounting_a01

724EM0280
Financial Management
Lecture – 3hr/3cr. Chiu-Ling Lu
The purpose of this course is to provide students with the insight into the corporate financial management and capital markets. We will emphasize the financial aspects of managerial decisions and will cover all areas of finance, including the valuation of real and financial assets, risk management and financial derivatives, the trade-off between risk and expected return, corporate financing and payout policy. (II) ’07-2, ’08-2 ’09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981724M0280

724EM0460
International Business Strategy
Lecture – 3hr/3cr. Hsueh-Liang Wu or Chun-Chung Chen

Provide a comprehensive yet concise description of the core concepts of strategic management that firms need to apply to compete successfully in the fast-paced and boundary-free environment. (I) (II) ’07-2, ’08-1, ’08-2, ’09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/972IBS_2009

724EM1270
International Financial Investments
Lecture – 3hr/3cr. Jr-Yan Wang
Foreign exchange theory, foreign exchange market, international portfolio theory, foreign exchange exposure, learn how to increase returns and lower risks for investors through international portfolio diversification and how to lower the cost of capital for firms by sourcing them internationally. (II) ’07-2, ’08-2

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

724EM9220
Competitive Strategy
Seminar – 3hr/3cr. Chun-Chung Chen
This course is designed to illustrate the goals and processes of strategy analysis, strategy formation, and strategy implementation. (I) ’08-1, ’09-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981_Strategy

724EU0450
Services Marketing
Lecture – 3hr/3cr. Jiun-Sheng Lin
The purpose of this course is to (1) provide an overview of services marketing as a managerial challenge; (2) familiarize students with services marketing mix related
knowledge; and (3) enable students to improve the ability of working problems and projects out.

Lectures, class participation, case discussions and group projects are designed to help students LEARN as more as possible in INTERESTING and FUN ways. (I) ’08-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

724EU0580
Financial Computation
Lecture – 3hr/3cr. Jyr-Yan Wang

Combination of three fields: finance, computer science, and mathematics, students are required to have prior knowledge in financial theories (derivatives), basic ability of computer programming is needed. (II) ’07-2, ’08-2

Prerequisite: n/a
URL: n/a

725EM2410
Information Economy
Lecture – 3hr/3cr. Ming-Hui Huang

Offer a forum for research at the intersection of the information technology and economics disciplines, with a major focus on the business challenges in the digital economy. Address the following questions: 1) How much information is needed? 2) How much should be paid for information? 3) How can information be used? This includes signaling, moral hazard, trust, and information asymmetry. (II) ’07-2, ’08-2

Prerequisite: n/a
URL: n/a

725EM3010
Readings in Supply Chain Network Management
Lecture – 3hr/3cr. Kwei-Long Huang

This class is designed to introduce students to important topics in Supply Chain Management such as supply chain network design, advanced planning schedule, linear programming model, and etc. The students will learn the theorems and algorithms used in the numerical computation of this course. Supply Chain Management is also a subject of a wide variety of real-life applications. The student will be trained to apply Supply Chain Management theorems and algorithm to many of these applications during their dissertation. (I) ’08-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

725EM3270
Seminar on Behavior Economics
Seminar – 2hr/2cr. Ming-Hui Huang

This course offers a forum for research at the intersection of the information technology and economics disciplines, with a major focus on the business challenges in the digital economy. We attempt to address the following questions: I) How much information is needed? This includes bounded rationality, incomplete information, and information search. 2) How much should be paid for information? This includes vendor pricing and buyer willingness to pay. 3) How can information be used? This includes signaling, moral hazard, trust, and information asymmetry. (I) ’08-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

725EM3290
Seminar on Text Mining and Summarization
Seminar – 2hr/2cr. Chien Chin Chen

This course is designed to survey the state of the art techniques in information retrieval and text mining. Students need to read and present papers in this courses. (I) (II) ’08-1, ’08-2, ’09-1

Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a
725EM3540
Seminar on Information Security
Seminar – 2hr/2cr. Wei-Yuan Hsu
(I) (II) ‘08-1, ‘08-2, ‘09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

725 M3560
Information Security Management and Governance
Lecture – 3hr/3cr. Wei-yuan Hsu
Provide students with an overview of information systems security knowledge, protect an organization’s information assets against possible security threats and vulnerabilities. (II) ‘08-2
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

725EM3580
E-Service
Lecture – 3hr/3cr. Ming-Hui Huang
Shifting of the economy from goods to service and the rapid expansion of the information economy and electronic networks converge in the concept of E-Service, which is the provision of service over electronic networks such as the Internet. (II) ‘08-2
Prerequisite: n/a
URL: n/a

725EM3620
Seminar on Service Sciences
(I)
Seminar – 2hr/2cr. Ming-Hui Huang
Service science is an emerging research topic that has not yet had an agreed upon definition, boundary, and research methodology. The service science seminars i and ii focus only on e-service, the provision of service over electronic networks such as the internet, and break the topic into two parts: service and science. The service part explores the content and boundary of this new research topic, and the science part addresses various methodologies and technologies that can be used to approach e-service. the two parts of service science will be discussed in two semesters respectively. (I) ‘09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

725EU3320
Electronic Commerce
Seminar – 3hr/3cr. Ming-Hui Huang
This course is designed to give you substantial theoretical and practical depth into the interdisciplinary content of electronic commerce (EC). In this course, EC is viewed as primarily concerned with exchanges enabled by IT artifacts. Three properties and four propositions surrounding EC’s core constitute the framework of this course. (1) EC actors embedded in socio-technical networks behave to consummate exchanges. (2) The price-value equivalence mechanism directed at consummating and/or facilitating exchanges is achieved through the propositions of value pricing, e-service, network mediation, and information exchange. The outcome of EC exchange is maximization of actor value through the value-added chain of value pricing, e-service, network mediation, and information exchange, with welfare analysis being the analytical mode. (I) ‘08-1, ‘09-1
Prerequisite: n/a
URL: n/a

725EU3360
Knowledge Management
Lecture – 3hr/3cr. Houn-Gee Chen
Nature and management of knowledge, future and challenges of the knowledge market, origins of knowledge, knowledge integration and transfer, knowledge management and organizational learning, strategies in knowledge management, knowledge management case studies, knowledge management tools and
techniques. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972km

725EU3410
Introduction to Information Retrieval and Text Mining
Seminar – 3hr/3cr. Chien Chin Chen
This course will cover the concepts and algorithms of information retrieval and text mining. Theoretical topics, including term extraction, term weighting, vector space model, binary independence model, language model, IR system evaluations, naive bayes classification, Rocchio classification, kNN, k-means, HAC, PageRank, and HITS, will be presented in this course. Meanwhile, programming assignments and term projects will be given to help students understand the development of an IR system. (I) ’08-1, ’09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://ceiba.ntu.edu.tw/981IRTM

741ED5210
Seminar in Strategy Theory
Seminar – 3hr/3cr. Chung Ren Chen
(I) ’08-1, ’09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: n/a

741EM0620
Marginal Accounting
Lecture – 3hr/3cr. Che- Nen Ko
Fundamental and general understanding of management accounting and how to apply accounting information and system in management of business organizations: costing methodology in various industries, planning and control system for organizations, and accounting information analysis for decision making. Emphasizes on the implementation of managerial concepts via concrete accounting information system and analytical model, together with discussions on related behavioral and organizational issues. (I)(II) ’07-2, ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/course/055bde/index.htm

741EM2300
Information Management
Lecture – 3hr/3cr. Houn-Gee Chen
1) Understand the information systems in general, particularly in the Internet era, discusses issues on how to achieve the competitive advantages with information systems. 2) Explore information technology infrastructure by looking into the hardware, software, database, and knowledge base in the value-creating process. 3) Examine the key system application issues on operation, customer, market, and decision-making. 4) Concentrates on building and managing information systems and societals aspect of information systems. (I)(II) ’07-2, ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: n/a

741EM4570
Seminar on Strategy and Organization
Seminar – 3hr/3cr. Chung Ren Chen
(I) ’08-1, ’09-1
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)
URL: http://140.112.110.2/titleteachweb11.htm

741EM9810
Revenue Management and Pricing
Lecture – 3hr/3cr. Kuo Chia Wei
(I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981RM
**741EU3440**  
**System Simulation**  
Lecture – 3hr/3cr. Yu Jiun Yu  
(I) '08-1  
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)  
URL: n/a

**741EU9300**  
**Marketing on the Internet**  
Lecture – 3hr/3cr. Chun-Yao Huang  
1. Help senior undergraduate as well as MBA students majoring in Marketing more realistically understand the commercial Internet environment.  
2. Familiarize participants with marketing mixes on the Internet.  
3. Familiarize participants with various business models for both offline and online market players.  
4. Familiarize participants with keyword advertising practices given the opportunity provided by the Google Online Marketing Challenge initiative. (I)(II) '07-2, '08-1, '09-1  
Prerequisite: n/a  
URL: n/a

**741EU9440**  
**Knowledge Management and Service Innovation**  
Lecture – 3hr/3cr. Houn-Gee Chen  
Nature and management of knowledge, future and challenges of the knowledge market, origins of knowledge, knowledge integration, knowledge transfer, knowledge management and organizational learning, strategies in knowledge management. (II) '08-2  
Prerequisite: Limited to students from within this department (including students taking minor and dual degree program)  
URL: n/a

**741EU9880**  
**Statistical Data Analysis for Business and Management**  
Lecture – 3hr/3cr. Yu-Jiun Yu
College of Public Health (14)

Contact Info:
Department office (phc@ntu.edu.tw)

841 U5200
Exposure Assessment
Lecture/ Discussion – 2hr/2cr. Chang-Fu Wu

Introduce the purposes and processes of conducting environmental and occupational exposure assessment. Discuss the use of available sampling tools and models to gather data for exposure monitoring and modeling. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971_IEOH

841EU1480
Methods of Epidemiologic Research
Lecture – 2hr/2cr. Jung-Der Wang

The course uses a textbook written by Professor Wang and every student is required to read a chapter every week and a quiz is given, which is followed by free discussion and the professor provides at least three studies of his own to demonstrate the theme outlined in the text. After this course, students are equipped with basic concepts of epidemiological research and are expected to be able to conduct and give critique to such a study. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981epi2009

841EU5390
International Environmental and Occupational
Lecture/ Discussion – 2hr/2cr. Yue-Leon Guo

This class reviews the international perspectives on environmental and occupational health. New developments in environmental and occupational health in Asian countries including Taiwan, Japan, Singapore, and Korea will be used as examples. (I) ’08-1,’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972STEOH

841EU5510
Special Topic on Environmental Occupational Health (I)
Lecture/ Discussion – 2hr/2cr. Tsun-Jen Cheng

Designed for the doctoral students of the Institute of Occupational Medicine and Industrial Hygiene; Also welcome graduate students who are interested in the topics of environmental and occupational health. The course is instructed by the faculty of the Institute of Occupational Medicine and Industrial Hygiene. Faculty from other institutes of the College of Public Health is also invited to give special lectures. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971STEOH

841EU5520
Special Topic on Environmental Occupational Health(II)
Lecture-2hr/2cr. Tsun-Jen Cheng

This is a required course for doctoral students in this institute. It is instructed in English by the faculty of the institute and invited speakers. Students can learn the methodology through the research work presented by each lecturer. (II) ’08-2
Prerequisite:n/a
URL: http://ceiba.ntu.edu.tw/972STEOH

841EU5630
Sustainable Health and Environment
Lecture/Discussion – 3hr/3cr. Chang-Chuan Chan

The course is designed for students who like
to learn about the field of sustainable health and environment from an East Asian perspective in a globalized world. Students will learn facts and developments in issues related to sustainable health and environment through cross-country lectures, multimedia viewing, panel discussing, and group projects and presentations. The sciences of sustainable health and environment cover broad and intersected disciplines from health sciences, physical sciences to social sciences locally, regionally, and globally. Students’ views of sustainable health and environment will be cultivated from current and historical perspectives as well as local and regional living experience. Global perspectives of students will be further cultivated through in-class discussion among students, group projects by cross-country teams, and essay writing. Guest lectures by distinguished experts in the fields of sustainable health and environmental sciences will provide students with global perspectives on sustainable issues. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Sus_Health_Env

841 M1580
Seminar in Environmental and Occupational Medicine
Lecture/Discussion – 1hr/1cr. Jung-Der Wang

This course intends to train every student how to critique a paper and make appropriate inference. Every week students are assigned to critique at least two papers selected by students and background knowledge is first presented by one student who selects this paper. Every student is required to fill out a critique form before the class and then discuss openly in the class. Two forms are used: One for descriptive and another one for causal studies or inferences. After this class of putting exercises on about 32 papers, every student can make appropriate inference independently. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972paperreading

841EM1890
Seminars in Environmental and Occupational Medicine (I)
Lecture-2hr/2cr.

This class will educate students to become familiar with research designs and methodologies in environmental and occupational medicine. The students will be able to design and carry out research in occupational and environmental medicine. In addition, effective communication with scientific design and data analysis will be practiced. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981OEMseminar

841 D0850
Environmental and Occupational Health Seminar
Seminar – 2hr./1cr.

Each week there are two students to present the most updated themes of his/her thesis and the progress of research. All the other students can ask the presenter whatever kinds of questions for his/her to respond. The instructors will provide his/her own comment at the end of the class. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981EOHSeminar

843EM3110
Strategic Management for Health Care Managers
Lecture - 2hr /2cr. Ming-Chin Yang

The title of the course has been instrumental in shaping the focus of this course and the material to be covered. My particular emphasis will be on management strategy within the context of current theory and practice. We will introduce new concepts, develop and refine old ones, expand upon your theory of management and organizations, and examine present and emerging practices. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/972strat_mgnt_
Food safety is a global issue because of the increasing internationalization of food production. This course will cover important aspects of natural toxins, environmental pollutants, and emerging issues (such as genetically modified foods, prion diseases, and international regulations). (II) '07-2, '08-2
Prerequisite: Backgrounds in physiology, microbiology, and organic chemistry
URL: http://ceiba.ntu.edu.tw/972foodsafety

This is an elective course for students interested in toxicogenomics. Application of genomic technologies, i.e. genomics, transcriptomics, proteomics, and metabolomics will be introduced. Genomic technologies will be first discussed. The course will then focus on application of genomic approaches to study the adverse effects of environmental stressors on health of human and environment at gene, protein, and metabolite level. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

1) Introduce the fundamental principles in the field of toxicology. Physicochemical properties of toxicants following the fate processes (absorption, distribution, metabolism, and elimination), toxicokinetics, and toxicodynamics will be presented. Factors affecting fate and response and mechanisms of toxic action will also be discussed within the course. 2) Introduce the fate of chemicals in the environment. 3) Modern techniques in studying toxicant metabolism and environmental toxicology will be discussed. (I) '07-2, '08-2, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971envtox_lin
College of Electronic Engineering and Computer Science

Science (63)

Contact Info:
Department office (college@cc.ee.ntu.edu.tw)

901E10110
Introduction to Computer
Lecture – 3hr/3cr. Tsung-Nan Lin

1. Data Storage
2. Data Manipulation
3. Operating Systems and Networks
4. Algorithms
5. Programming Languages
6. Software Engineering
7. Data Structures
8. File Structures
9. Database Structures
10. Artificial Intelligence
11. Theory of Computation (II) ’07-2

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/962_CS

901E30700
Introduction to Multimedia Processing
Lecture – 3hr/3cr. Homer H. Chen

1) Introduction to Multimedia,
2) Multimedia Authoring Tools,
3) Graphics And Image Data Representations,
4) Color In Image And Video,
5) Fundamental Concepts In Video,
6) Basics Of Digital Audio,
7) Lossless Compression Algorithms,
8) Lossy Compression Algorithms,
9) Basic Video Compression Techniques,
10) Basic Audio Compression Techniques,
11) Computer And Multimedia Networks,
12) Multimedia Communicaitons and Applications. (I) ’09-1

Prerequisite: Computer Programming (C/C++, Matlab, etc), Engineering Mathematics (Linear Algebra, etc)
URL: http://ceiba.ntu.edu.tw/981mmsp

901E31110
Introduction to Computer Networks
Lecture – 3hr/3cr. Polly Huang

1. Understanding The Data Communication Basics
2. Knowing The Layered Architecture
3. Examining The Mechanisms Running Over The Internet (I) ’09-1

Prerequisite: Introduction To Computers Or Equivalent
URL: n/a

902E10720
Introduction to Computer
Laboratory/ Discussion – 3hr/3cr. Yung-Jen Hsu

This is an introductory course for first-year students in Computer Science and Information Engineering. It aims at giving the students an overview of the history, basic concepts, important tools, and current trends in Computer Science. As the first course for CSIE majors, it is also designed to help students learn the basic computer skills needed for subsequent study. To achieve these two objectives, the course begins each week with a two-hour lecture session followed by a one-hour lab session, so that students gain hands-on experiences immediately after learning a new topic. (I) ’08-1, ’09-1

Prerequisite: n/a
URL: n/a

902E36700
Operating Systems
Lecture/ Discussion – 3hr/3cr. Hao-Hua Chu

An operating system defines an abstraction of hardware behavior with which programmers can control the hardware. It also manages resource sharing among the computer’s users. The covered topics include process management, process coordination, memory management, file systems, protection and security. For hands-on experience, students will also
learn how to build major components of an operating system. (I)(II) '08-1, '08-2, '09-1

Prerequisite: Introduction To Computers Or Equivalent
URL: http://mll.csie.ntu.edu.tw/course/os_f08/

902E43500 Formal Languages and Automata Theory

Lecture – 3hr/3cr. Chih-Jen Lin

Automata and Languages: Mathematical models of computation. Computability Theory: Problems CAN and CANNOT be solved by computers. Complexity Theory: Why some problems are hard but some are easy? (I) '08-1, '09-1

Prerequisite: n/a
URL: n/a

921EU0080 Power Electronics

Lecture – 3hr/3cr. Li-Chen Fu

Introduce basic power converter circuits, feedback control for regulators, and magnetic components used in power circuits. (II) '07-2, '08-2

Prerequisite: Basic Electronics
URL: n/a

921EU2800 Computers Simulation

Lecture/ Laboratory – 3hr/3cr. Chuni-Ting Chou

Discusses modeling and simulations of wireless networks: wireless personal area networks (WPANs) such as ZigBee or WiMedia UWB, cognitive radio networks. Abstraction of complicated wireless networks: physical and medium access control (MAC) layers and modeling techniques. Develop process models and software modules using Opnet Modeler for performance evaluation of wireless networks. (I) '07-2, '08-1, '08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971_computer_simu

921EU2930 Magnetic Resonance Imaging: Principles and its Applications

Lecture/ Laboratory – 3hr/3cr. Chung, Hsiao-Wen

Lecture – 3hr/3cr. 1) Introduction to course format and introduction to MRI, 2) Source of NMR signals, excitation & detection, and spin echo, 3) Relaxation and spatial encoding (slice selection), 4) Spatial encoding (freq & phase encoding) and image formation, 5) Instrumentation (magnets, gradient coils), 6), Instrumentation: (RF coils), image quality & contrast, 7) Principles of k-space and EPI, 8) Artifacts and remedies, 9) Mid-term written exam, 10) Mid-term lab exam, 11) Fast scanning MRI, 12) Flow effects and MR angiography, 13) Phase-contrast hydrodynamic analysis and diffusion MRI, 14) Perfusion MRI and BOLD brain functional imaging, 15) Clinical neural spectroscopy and chemical shift imaging, 16) Bioeffects & safety, 17) Final exam. (I) '08-1

Prerequisite: n/a
URL: www.mrilab.org

921EU3040 Nonlinear Programming

Lecture – 3hr/3cr. Kuen-Yu Tsai

Provide students the capability of recognizing and formulating convex optimization problems arising from their own research fields, and to let students understand how such problems are solved and have some experience in solving them. (II) '07-2, '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972_CVX

921EU3430 Digital IC Engineering

Lecture/ Laboratory – 3hr/3cr. James B Kuo

Entry-level fundamental knowledge of CMOS digital IC engineering, which is focused around three basic elements-technology, device and circuit. (I) '07-2, '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971dic
921EU5010  
Digital Communication Integrated Circuits Design  
Lecture – 3hr/3cr. Tzi-Dar Chiueh  
Training in wireless baseband OFDM transmission system design: cross-disciplinary knowledge in diverse fields, e.g. communication theory and integrated circuit design. (II) ’07-2, ’08-2  
Prerequisite: IC Design, Principle of Communications  
URL: https://ceiba.ntu.edu.tw/972commic

921EU6700  
Introduction of Biochip Technologies  
Lecture – 3hr/3cr. Eric-Y Chaung  
1) Introduction of biochip technologies 2) Basic Concepts of biochemistry and molecular biology 3) Microarray production 4) Microarray Detection 5) Microarray Informatics 6) Biomedical applications of microarrays (I) ’08-1  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971ntubebi_biochip

921EU7120  
Integrated Circuit Technology  
Lecture – 3hr/3cr. Guo-Yu Xuan  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/971ictech

921EU7210  
VLSI Design for Manufacturability  
Lecture – 3hr/3cr. Kuen-Yu Tsai  
[Design for manufacturability (DFM) is the general engineering art of designing products in such a way that they are easy to manufacture. Achieving high-yielding designs in the state of the art nanometer-VLSI technology has become an extremely challenging task due to the miniaturization and the complexity of leading-edge products. DFM includes a set of techniques to modify the design of integrated circuits in order to make them more manufacturable, i.e., to improve their functional yield, parametric yield, or their reliability. This introductory course focuses equally on theoretical and simulation aspects of the subject. Students will get exposure to some important physical concepts and mathematical skills for process variation modeling, circuit performance variation modeling, and robust design methods to minimize the variations. Topics related to testability and low power design will also be introduced. Students are required to run simulation tools available from CIC (National Chip Implementation Center), and integrate the concepts and knowledge learned into their final projects. (II) ’07-2, ’08-2  
Prerequisite: n/a  
URL: http://ceiba.ntu.edu.tw/972_DFM

921EU7400  
Network Simulation and Testing  
Lecture – 3hr/3cr. Polly Huang  
Prerequisite: n/a  
URL: n/a

921EU8910  
Pervasive Computing in Vehicular Overlay Network  
Lecture – 3hr/3cr. Hung-Yu Wei  
(1) Introduction to Vehicular Overlay Networks (1a) Comfort Applications (1b) Safety Applications (2) Opportunistic Ad Hoc Networking (2a) MAC Protocols (2b) Service differentiation (2c) QoS Routing Protocol (3) Car to Car Content Sharing / Delivery (3a) Content Delivery mechanism (3b) Overlay Construction mechanism (3c)
Path Diversity (4) Searching on Mobile Storage (4a) Searching in Structured Networks (4b) Searching in Unstructured Networks (4c) Blind Searching Algorithms (4d) Knowledge-based Searching Algorithms (5) Efficient Car to Car Application Design (5a) Application Architecture (5b) Performance Metrics (6) Wireless Multihop Relay Architecture (6a) IEEE 802.11 based multihop relay (6b) IEEE 802.16 based multihop relay. (I) ’08-1

Prerequisite: Introduction to Wireless and Mobile Networking, Vehicular Network Communication Technologies URL: http://ceiba.ntu.edu.tw/971vehicular

921EU9740
VLSI Physical Design
Lecture – 3hr/3cr. Sao Jie Chen

This is a basic course on the VLSI physical design automation, and taught in English. Major topics covered in this course are: (1) Introduction to VLSI Physical Design Automation. (2) Data Structures and Basic Algorithms. (3) Partitioning and Placement. (4) Global Routing and Detailed Routing. (5) Via Minimization and Over-the-Cell Routing. And (6) Physical Design Automation of FPGAs and MCMs. Senior under- and graduate- students are all welcomed to this course. (I)/(II) ’07-2, ’09-1

Prerequisite: Programming Language (C or C++) URL: http://soclab.ee.ntu.edu.tw/

921EM1380
Adaptive Control System
Lecture – 3hr/3cr. Li-Chen Fu

This course is designed for graduate students. It aims to help them to learn techniques that can help analyze linear or nonlinear systems with unknown parameters, and in turn to use the results to design an appropriate system controller for the purpose of desired tracking. (II) ’07-2, ’08-2

Prerequisite: Automatic control theory, linear systems, Nonlinear systems URL: https://ceiba.ntu.edu.tw/972adaptive

921EM1560
Advanced Magnetic Resonance Imaging Techniques
Lecture/ Laboratory – 3hr/3cr. Chung, Hsiao-Wen

1) Introduction to course format, 2) Relaxation mechanisms, contrast agents, 3) Advanced gradient-echo imaging, 4) Perfusion with arterial spin labeling, 5) k-space analysis for RF pulse design, 6) Shinnar-LeRoux RF pulse design, 7) Ultrashort TE imaging, 8) Imaging with hyperpolarized idle gas, 9) Iron-oxide contrast agents, 10) Data sharing with Unfold and k-t Blast, 11) Contrast-enhanced MRA with acceleration, 12) Chemical exchange saturation transfer, 13) Echo planar spectroscopic imaging, 14) Sparse sampling with compressed sensing. (I) ’09-1

Prerequisite: Magnetic Resonance Imaging: Principles And Its Applications URL: www.mrilab.org

922EU0280
Numerical Methods
Lecture – 3hr/3cr. Chih-Jen Lin

Numerical methods are important for many practical engineering problems: mathematical modeling, algorithmic development, and efficient numerical computing. (II) ’08-2

Prerequisite: n/a URL: n/a

922EU0960
Machine Learning
Lecture – 3hr/3cr. Hsuan-Tien Lin

Machine learning allows computational systems to adaptively improve their performance with experience accumulated from the data observed. This course
introduces the basics of learning theories, the design and analysis of learning algorithms, and some applications of machine learning. (I) '08-1, '09-1
Prerequisite: "Calculus", "Probability", "Linear Algebra", and "Introduction to Computer Programming"
URL: http://www.csie.ntu.edu.tw/~htlin/courses/ml09fall/

922EU1020
Introduction to Digital Signal Processing
Lecture – 3hr/3cr. Ming-Sui Li
Provide a basic introduction to the theory of digital signal processing. (I)(II) '07-2, '08-1, '08-2, '09-1
Prerequisite: n/a
URL: www.csie.ntu.edu.tw/~dsp

922EU1070
Robotics
Lecture – 3hr/3cr. Li-Chen Fu
Introduction to the key issues involved in the development of intelligent robotics, issues such as spatial transformation, kinematics, software control architectures, sensing, localization, and navigation. (I) '08-1, '09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971robotics

922EU1690
Introduction to Automation of Production System
Lecture – 3hr/3cr. Li-Chen Fu
Comprehensive technical survey of the important topics in production automation and related topics: production system planning and scheduling, computer integrated manufacturing, flexible manufacturing system, group technology, and etc. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972automation

922EU1940
Virtual Reality
Lecture – 3hr/3cr. Ming Ouh Young
Part I: Virtual Reality Part II: Display and Visualization Part III: Hardware and accelerators Part IV: Virtual reality paper survey and term project (II) '07-2
Prerequisite: n/a
URL: http://www.cmlab.csie.ntu.edu.tw/~ming/courses/rg/

922EU3010
Digital Image Processing
Lecture – 3hr/3cr. Ming-Sui Li
Theoretical foundations and modern applications in digital image processing; Linear algebra, probability and calculus are the prerequisite of this course. (I)(II) '08-1, '08-2, '09-1
Prerequisite: Have good programming skills in C/C++
URL: www.csie.ntu.edu.tw/~dip

922 EU3020
Artificial Intelligence
Lecture – 3hr/3cr. Yung-Jen Hsu
An overall understanding of the basic concepts in AI. A foundation for further study in the field of artificial intelligence. Including:
Problem solving & search; Knowledge representation; Logical reasoning; Machine learning; Probabilistic reasoning (I) '07-2, '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971AI2008

922EU3070
Pervasive & Ubiquitous Computing
Lecture – 3hr/3cr. Hao-Hua Chu
Ubiquitous and pervasive computing (UbiComp/PerCom) is about how computing will be used in the future. It is about moving beyond the traditional desktop computing model, into embedding computing into everyday objects and everyday activities.
The vision is that the virtual (computing) space will be seamlessly integrated with our physical environment, such that we as people cease to take notice of computing artifacts. In this course, we will focus specifically on the following topics to realize this vision of ubiquitous computing: UbiComp vision and criticism, smart everyday objects and context awareness, ambient and tangible interfaces, localization system, and UbiComp software system. This is a research-level course with the goal of preparing graduate students and senior undergraduate students for research in the area of ubiquitous and pervasive computing. This course will have three main components: in-class discussion, hands-on projects, and paper reading. Somehow different from previous semester, "in-class discussion" is expected to dominate this course's learning process. Papers will be used as references to generate ideas for discussion. In the hands-on projects, students will form teams to explore actual design and prototype of ubiquitous computing systems or applications. (II) '07-2, '08-2

Prerequisite: n/a
URL: http://mll.csie.ntu.edu.tw/course/ubicomp_s08/

922EU3360
Advanced Mobile Robotics
Lecture – 3hr/3cr. Chieh-Chih Wang

Cover modern probabilistic and statistical techniques, relative new approaches to robotics that pay tribute to the uncertainty in perception, learning and action. The topics that will be discussed include: Probabilistic State Estimation, Gaussian Filters, Nonparametric Filters, Occupancy Grid Mapping, 3D Mapping, Visual Simultaneous Localization and Mapping (V-SLAM), SLAM in Dynamic Environments, Information Filter-based SLAM, Particle Filter-based SLAM, Markov Decision Process, Partial Observable Markov Decision Process, and Multiple Robot Systems. (II) '08-2

Prerequisite: Familiarity with basic robotics concepts is needed for this course, as well as hands-on experience with software development in Matlab, C, or C++. URL: https://ceiba.ntu.edu.tw/972AMR

922EU3820
Systems Analysis on Metabolomics
Lecture – 3hr/3cr. Tseng Y. Jane

The collection of all metabolites in a biological organism, which are the end products of its gene expression. Thus, while mRNA gene expression data and proteomic analyses do not tell the whole story of what might be happening in a cell/organism, metabolic profiling can give an instantaneous snapshot of the physiology of
922EU3830  
**Advanced Computer-aided Drug Design**  
Lecture – 3hr/3cr.  
_Tseng Y. Jane_  
This class is for graduate students studying Advanced Computer-aided Drug Design, Molecular Modelling, Computational Chemistry to better prepare them to do postgraduates and researchers in academia and in the chemical and pharmaceutical industries. This class introduces background theory and techniques of molecular modelling, also illustrates applications in studying physical, chemical and biological phenomena. (II) *08-2*  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/972SysMeta

922EU3870  
**Cloud Computing and Mobile Platforms**  
Lecture – 3hr/3cr.  
_Steven Liao_  
This class provides 3 perspectives that are highly relevant to Taiwan's industry: perspective as service developer, perspective as cloud infrastructure developer, and perspective from cloud edge. According to dean&ghemawat in cacm 2008, google processed over 400 pb of data on datacenters composed of thousands of machines in september 2007 alone. What challenges emerge when computing on such a scale? Users need simple and expressive parallel programming models. On the systems side, these models need to allow for scalable and fault-tolerant implementation on commodity computers. We will describe ways in which these challenges can be addressed. Programming assignments will be given. After the coverage on the cloud computing above, we will talk about android as an example of mobile platforms. Finally, we will discuss how cloud computing and mobile platforms amplify each other. (II) *09-1*  
Prerequisite: n/a  
URL: https://nol.ntu.edu.tw/nol/coursesearch/print_table.php?course_id=922%20U3870&class=&dpt_code=9220&ser_no=17051&semester=98-1

922EM0520  
**Computing Theory**  
Lecture – 3hr/3cr.  
_Yuh-Dauh Lyuu_  
This courses will introduce the important issues in theory of computation, such as Church-Turing thesis, computability, time complexity, space complexity, circuit complexity, P-completeness, NP-completeness, pseudorandom generator, primality testing, interactive proof system, and approximability. (I) *08-1,*  
Prerequisite: n/a  
URL: https://ceiba.ntu.edu.tw/modules/index.php?csn=fd3a7a&default_fun=&stu=&current_language=english

922EM1220  
**Advanced Artificial Intelligence**  
Lecture – 3hr/3cr.  
_Yung-Jen Hsu_  
This is a research-oriented course on reasoning techniques and applications. Topics include automated reasoning, ontology, probabilistic reasoning, and graphical models. Students are expected to read 3~4 papers per week, and complete a research paper as the term report. (II) *08-2*  
Prerequisite: n/a  
URL: http://course.agent.csie.org/course/view.php?id=22

941EU0140  
**Introduction to Lightwave Devices**  
Lecture – 3hr/3cr.  
_Gong-Ru Lin_  
This course briefly introduces the fundamentals of passive and active optical devices and modules for their application in fiber-optic communication networks. The students are expected to establish fundamental concepts from the learning through lecture and references. The homework or report will be required to practice engineering skills on problem solving and data analysis. Most students will be familiar with the operation of
fiber-optic components, modules and communication architectures by taking this course. (II) '07-2
Prerequisite: n/a
URL: n/a

941EU0160
Applications of Laser and Nonlinear Crystals
Lecture – 3hr/3cr. Lung Han Peng
Prepare students with knowledge and skills to understand and analyze the milestone papers in the area of nonlinear optics and lasers (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

941EU0190
Solid-State Lasers
Lecture – 3hr/3cr. Chi-Kuang Sun
Simple model for laser operation, properties of solid-state laser materials, laser oscillator design, optical pump-system design, thermo-effects and heat removal. Operations of q-switching, modelocking, and parametric oscillators will also be included. (I) '08-1, '09-1
Prerequisite: n/a
URL: n/a

941EU0230
Medical Photonics
Lecture – 3hr/3cr. Snow H. Tseng
Introduce the fundamental principles of various techniques used in modern biomedical applications: Grasp the underlying principles of novel biomedical imaging and diagnostic techniques, and understand their advantages and limitations. (II) '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972_medicalphotonics

941EU0340
Introduction to Display Technologies
Lecture – 3hr/3cr. Jian Jang Huang
An introduction course to display technologies (I) '09-1
Prerequisite: Students need to have the following background 1. Fundamental physics (Freshman year) 2. Electromagnetic wave
URL: http://ceiba.ntu.edu.tw/981display

941EU0350
Wide Gap Semiconductor Technologies
Lecture – 3hr/3cr. Zhe-Chuan Feng
Prerequisite: n/a
URL: n/a

941EU0380
Short-Wavelength Semiconductor Engineering
Lecture – 3hr/3cr. Zhe-Chuan Feng
[A] Introduction; [B] Crystal growth of semiconductors for short-wavelength application: MOCVD, sublimation growth, chemical vapor deposition (CVD); [C] Analysis Engineering for short-wavelength semiconductors: Polytypes, Stress and strain, In-situ monitoring, Interdisciplinary characterizations, Optical analysis (Photoluminescence, Raman scattering, transmission/reflectance), Structural analysis (high-resolution X-ray diffraction,
941EU0570
Simulation of Light Scattering and Propagation
Lecture – 3hr/3cr. Hsueh-Feng Tseng
To provide students with the understanding and foundation of simulation techniques used in the research of light scattering in macroscopic random media. Upon completion of this course, student will be able to:

1) Grasp the scope of contemporary and emerging techniques used in the study of multiple light scattering by particle systems and continuum random media.

2) Understand the advantage and limitations of conventional research techniques used in biomedical research, including light scattering by randomly-packed particle systems or biological tissue structures. (I) '08-1

Prerequisite: General Physics - Calculus - Electromagnetism - Basic programming skills (Matlab, Fortran, or C/C++)
URL: http://ceiba.ntu.edu.tw/971_simulate_light

942EU0140
Power Amplifier Design for Wireless Communications
Lecture – 3hr/3cr. Tian-Wei Huang
1) Linear power amplifiers. 2) High-efficiency amplifiers. 3) Non-linear effects in RF PA. 4) PA for broadband communication. 5) PA Layout and simulation. 6) Efficiency enhancement. 7) Linearization techniques. 8) PA architecture. 9) High-Yield amplifier design. 10) 802 standard and link design. (II) '08-2

Prerequisite: n/a
URL: n/a

942EU0170
Transmission-Line Modes and Microwave Circuits
Lecture – 3hr/3cr. Ching-Kuang Tzuang
1) Field theory: the fundamentals
2) Waveguides: the fundamentals, standard and non-standard eigenvalue problems
3) Rectangular 4) Planar transmission lines
5) quasi-planar transmission lines
6) higher-order modes in planar and quasi-planar transmission lines
7) effects of finite conductivity and finite metal thickness on modes
8) coupled-modes approach and the standard eigenvalue approach
9) gyromagnetic waveguides
10) leaky modes in planar and quasi-planar structures
11) waveguide perspective of antenna
12) synthetic waveguide and advanced microwave circuit design approach
13) modes and modal transitions
14) electromagnetic bandgap (EBG) waveguide
15) negative index materials and left-hand transmission lines

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971ckt

942EM0310
Multirate Signal Processing, Filter Bank and Wavelet
Lecture – 3hr/3cr. See-May Phoong
1. Fundamentals of multirate systems
2. Maximally decimated filter banks
3. Paraunitary filter banks
4. Subband/wavelet coding and transform coding
5. Image and Audio Compression
6. Discrete Multitone (DMT) modulation
7. Wavelet transform and filter banks

Prerequisite: signals and systems, basics of random process, basics of digital communications and basics of digital signal processing
URL: n/a

942EU0340
Digital Communications (I)
Lecture – 3hr/3cr. Char-Dir Chung
Data modulation, demodulation, signal synchronization, source coding and decoding, channel coding and decoding, channel equalization and estimation.

Prerequisite: n/a
URL: n/a

942EU0470
Protocol Design and Standardization for Medium Access Control
Lecture – 3hr/3cr. Chuni-Ting Chou
This course discusses the protocol design and international standardization of the medium access control (MAC) layer. The MAC-layer protocol resolves the resource allocation issues, which occur when multiple devices try to access the medium at the same time. In this course, we will investigate various MAC protocols including (1) Zigbee for low-rate sensor networks, (2) WiMedia for high-speed wireless personal area networks, (3) IEEE 802.22 for cognitive radio networks, and (4) the Ecma TC32-TG20 for multi-gigabyte wireless links. Design issues such as network architecture, address assignment, coordination and synchronization, and resource reservation, etc will be covered.

Prerequisite: Students should have basic knowledge about communications, probability, as well as basic programming skills (Matlab or C)
URL: http://ceiba.ntu.edu.tw/981protocol

943EU0010
VLSI Testing
Lecture – 3hr/3cr. Chien-Mo Li
This course introduces test techniques for VLSI circuits. Important issues and their solutions will be covered. Homework includes hand written and computer assignments (in C or C++). A final team project is also required.

Prerequisite: Logic Design Computer Programming
URL: http://ceiba.ntu.edu.tw/981_vlsitesting

943EU0160
Introduction to Nano-Science and Technologies
Lecture – 3hr/3cr. Ren C. Luo
Nanotechnology is an emerging field of research and development dedicated to increasing the control over material structures of nanoscale size (0.1 to 100nm) in at least one dimension. Nanotechnology is also a cluster of emerging techniques from solid-state technology, biotech., chemical technology and scanning-probe technology that converge “top-down” and “bottom-up” to the nanoscale.
Today, nanotechnology consists of four
major fields: nanoelectronics, nanometerial, molecular nanotechnology, and nanoscale-resolution microscopes. Although the boundaries are fuzzy, these field represent different enabling technologies creating their own opportunities. (I)(II) '07-2, '08-1
Prerequisite: n/a
URL: n/a

943EU0220  
VLSI Design Automation  
Lecture – 3hr/3cr. Jiun-Lang Huang

1) Introduction to IC design methodologies and design automation tools 2) Algorithm graph theory 3) Computational complexity and general purpose optimization methods 4) Layout compaction 5) Placement and routing 6) Floorplanning 7) Routing 8) VLSI testing 9) Logic synthesis and verification 10) High-level synthesis 11) Future challenges (I)(II) '07-2, '08-1, '08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971EDA

943EU0300  
Logic Synthesis and Verification  
Lecture – 3hr/3cr. Jie-Hong Jiang

One of the important subjects in EDA, bridges the gap between high-level design and physical design, how to automatically and effectively translate register-transfer-level designs into transistor-level circuits. Verification, on the other hand, ensures the equivalence between high-level design and low-level implementation. (I) '08-1, '09-1
Prerequisite: n/a
URL: http://cc.ee.ntu.edu.tw/~jhjiang/instruction/instruction.html

943EU0360  
Special Topics on Applied Mathematical Logic  
Lecture – 3hr/3cr. Jie-Hong Jiang

Prerequisite: Discrete Mathematics
URL: http://cc.ee.ntu.edu.tw/~jhjiang/instruction/courses/spring08-logic/logic.html

945EU2930  
Special Topics in Micro and Nano Biotechnology  
Lecture – 3hr/3cr. Kuo, Po Ling

In this class, selected topics of the state-of-art technology will be instructed based on the lecturer's expertise. The content will be focused on the principle and application of individual technology. In particular, the lecture will elaborate on their potential role in the fundamental and clinical researches, reviewing the classical references. (I) '09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981_bioMEMS
College of Law (17)

Contact Info:
Ms. Yong-Jhen Shih (shihyc@ntu.edu.tw)

A01E20180
An Introduction to the Legal System of Taiwan
Lecture/discussion – 2hr/2cr. Chang-Fa Lo

Discussions about the main contents of the legal system of Taiwan: the sources of law in Taiwan, the legal framework of Taiwan, the Constitution of the Republic, the judicial system; the Constitutional Court (Council of Grand Justices), etc. Several weeks will be designed for the participating students to make presentations on the legal issues they choose. (II) ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972A01_20180

A01E29100
Introduction to Anglo-American Law
Lecture/discussion – 2hr/2cr. Wen-Chen Chang

Provide students with an introductory understanding of Anglo-American law. 1. a rather detailed discussion of the establishment of modern judicial review and the workings of the United States Supreme Court. 2. general features in common law development and procedures will be taught. 3. Understanding of how judicial power exercised in common law jurisdictions. 4. Important developments in Anglo-American legal culture and education will be discussed. (I)(II) ’07-2, ’08-1, ’08-2, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972anglo_american
http://140.112.150.86/chinese/03/assistant_professor/Wen_Chen_Chang.html

A01E39100
Law of Contracts
Discussion – 2hr/2cr. Jen Guang Andrew Lin

(I) ’08-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971Anglo_Contracts

A01E393b0
Law of Torts (B)
Lecture – 2hr/2cr. Jiunn-Rong Yeh

This course will focus on several issues: (1) Tort Law; (2) the developments and changes of legal trend since 1870s and its influences on Tort Law; (3) How Torts in Administrative State which center on Common Law cooperate with Administrative Schemes. (I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981Law_of_Torts

A21 D5090
Seminar on Fundamental Transnational Legal Problems (I)
Seminar- Chang-Fa Lo

The course is designed for Ph.D. students contemplating to prepare and write their dissertations on international and transnational law or related issues. Participants will be invited to engage in close interaction with the instructor so that toward the end of the semester, they will be able to develop the main themes, the structures, and the basic components for their dissertations. (I) ’09-1
Prerequisite: n/a
URL:n/a

A21EM5350
Seminar : Selected Topics on International Trade Law (I)
A21EU2330
Seminar on Legal Issues of WTO
Lecture/ Discussion – 2hr/2cr.  Chang-Fa Lo

1. From GATT 1947 to WTO, WTO Agreements and WTO Jurisprudence
2. Most-Favoured-Nation Treatment in GATT 1994
3. National Treatment in GATT 1994
4. Tariffs
5. Quantitative Restrictions under GATT 1994
6. Trade in Agriculture
7. TBT & SPS, Rules of Origin, State Trading, Customs Valuation
8. Anti-dumping
9. Subsidies & Countervailing Measures, Safeguards
10. Regional Trade Agreements
11. General Exceptions, Security Exceptions
12. Trade in Services: Principles
13. Trade in Services: Liberalization and Specific Sectors
14. TRIPS Agreement: Principles
15. Individual Intellectual Property Rights under TRIPS Agreement
16. Dispute Settlement Understanding

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971Emerging_Mark et

A21EU2300
Case Study on American Constitutional Law (I)
Lecture/discussion – 2hr/2cr.  Wen-Chen Chang

(I)(II) ’07-2

Prerequisite: n/a
URL: n/a
Discussion – 2hr/2cr. **Wen-Chen Chang**

Provide a background understanding of the development of international humanitarian law and to analyze basic and important documents and cases in the field, Serve as a preparatory mechanism for students who are interested in participating in the Inter-University Competition for International Humanitarian Law Moots held by Red Cross for East and Southeast Asia. Students are expected to be highly motivated, capable in using English, and ready to work with the instructor to shape the agenda of the course with the approaching of inter-university competition. (I) '08-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971ihl

A21EU2730
**Seminar on International Health Law**

Discussion – 2hr/2cr. **Chang-Fa Lo**

WHO Constitution and Its Governance, Historical Perspectives of International Health Cooperation & Health as a rights, The Operation of IHR from National and WHO Perspectives, Bioterrorism and IHR; International Cooperation, Relations between IHR and WTO Agreements, Measures relating to the reduction of demand for tobacco, Measures relating to the reduction of demand for tobacco, Measures relating to the reduction of the supply of tobacco, Relations between FCTC and WTO agreements (I) '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971HYGIENE

A21EU2850
**Ethical and Legal Issues in Biomedicine and Technology**

Lecture – 2hr/2cr. **Chang-Fa Lo**


Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972A21_1

A21EU2940
**Seminar on Constitutionalism in East Asia**

Discussion/ Lecture – 2hr/2cr. **Jiunn-Rong Yeh**

Designed to explore abovementioned issues through examining judicial decisions of Constitutional/Supreme courts in East Asian Countries, focusing primarily on Taiwan, Japan, and South Korea. Focused on relevant judicial decisions but not limited to them. Larger social/political backgrounds and relevant legal issues particularly in comparative angles would be also included. distinguished guest speakers from the region shall be invited to join class discussion. (I) '08-1, '09-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971east_asia_con_law

A21EU2950
**Seminar on Comparative Law (I)**

Discussion/ Lecture– 2hr/2cr. **Jiunn-Rong Yeh**

We hope that you will be able to catch a general picture of the commercial and enterprise laws of different countries and learn how to continue your interests of research in other jurisdictions. This would provide an opportunity and basis for you to engage in further comparative law studies. (I) '08-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971Comparative_Law

A21EU3010
**Seminar on Comparative Civil Law (I)**

Discussion – 2hr/2cr. **Sheng-Lin Jan**

(I) '08-1

Prerequisite: n/a
URL: n/a
College of Life Science (40)

Contact Info:
Department office (ntucols@ntu.edu.tw)

223 EU9240
Introduction to Biophysical Chemistry (TIGP)
Lecture – 2hr/2cr. Sunny I. Chen
Emphasizes transport phenomena, methods for the separation and characterization of macromolecules, treatment of the interaction of light with matter, methods of identification of macromolecules, methods of structural determination of macromolecules, and enzyme kinetics. The concepts and mathematical manipulations will be illustrated with biochemical and biophysical applications. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://idv.sinica.edu.tw/sfyu/BiophysChem

241EU1920
Computer Intensive Statistics in Ecology
Lecture – 3hr/3cr. Chih-Hao Hsieh
Provide students computational skills for sophisticated statistical methods that are often required for biological questions. (II) ’07-2, ’08-2
Prerequisite: familiar with at least one computer language to do the statistics
URL: https://ceiba.ntu.edu.tw/972computer_stat

241EU1940
Basic in Theoretical Ecology
Lecture/Laboratory – 3hr/3cr. Takeshi Miki
Basic course for senior undergraduate and graduate students with knowledge of basic biology. Basic knowledge on population dynamics is preferred. Basic but important mathematical methods for analyzing evolutionary dynamics in biological systems are offered. There will be dedicated time every week for students to do “paper-and-pencil” exercise. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971matheco

Colloquium
Lecture – 2hr/1cr. Po-Huang Liang
Students are required to participate at least 8 speeches held by any college or international conferences. At least 8 sentiments are needed in a semester. More speeches is recommended. (I)(II) ’07-2,
201EM3630
Ecological Modeling Seminar
Discussion – 2hr/2cr. Chih-Hao Hsieh
This is a course intended for students with basic knowledge of ecology, statistics, differential equations, and computer programming techniques and had some experience on modeling. We will discuss the application of mathematical modeling and computer programming techniques to investigate ecological questions. We will also discuss statistical analyses for identifying ecological patterns. Students will select a subject base on his/her own interest and present the progress of the chosen topic. The class is mainly in the form of discussion.
(I) ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981ecomodel

B01EU1000
Technical Writing and Scientific English
Lecture – 2hr/2cr. Ming-Kaung Wang
Designed to teach senior students (15 with thesis study) the basic of reading and writing in scientific english for magazine’s publication. To teach the fundamental skills of listing and speaking english in meetings and symposiums. (II) ’08-2
Prerequisite: n/a
URL: n/a

B01E101A2
General Biology (A) (2)
Lecture – 3hr/3cr. Yu-Teh Lin
A two-semester introductory course covering central biology concepts. To explore the fundamental characteristics of living matter from the molecular level to introduce the diversity organisms, their structure, function and evolution. (II) ’07-2, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972ENGBIO

B41EU1320
Early Developmental Embryology
Lecture – 2hr/2cr. Shyh-Jye Lee
Build the ground for students with interest in embryology. Discuss the basic principles and molecular controls of embryonic development. Emphasize the progression from immature gametes, fertilization, and cleavage to gastrulation. The popular experimental models used by current developmental biologist will be examined in detail. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971EED

B41EU1450
Gene Expression Analysis and Laboratory
Discussion – 3hr/3cr. Shyh Jye Lee
Students will be trained on various gene analysis techniques, including gene cloning, RT-PCR, in situ hybridization, and gene knockdown analysis. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/981GEA

B41EU1620
Proteomic Analytical Techniques in Shrimp
Seminar – 2hr/1cr. Wei-Pang Huang
(I) ’08-1
Prerequisite: n/a
URL: n/a
B41EU1630
Current Topics in Genetics
Lecture – 2hr/2cr. Ti-Ting Chau
Design for senior undergraduate students and graduate students who are interesting in exploring knowledge in modern genetics, focus on evolutionary developmental biology (also known as evo-devo). (II) ’07-2, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972curr_genetics

B41EU1640
Crustacean Virology
Discussion – 2hr/1cr. Chu Fang Lo
(I) ’08-1
Prerequisite: n/a
URL: n/a

B41EU1660
Neurobiology Mechanism of Pain (I)
Discussion – 2hr/2cr. James Wei Hu
“Special topics in neurobiology mechanism of pain” is a discussion course for graduate students and faculty members who are interested in the basic neurobiology mechanism of pain. (I) ’08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971pain

B41EU1670
Special Topics In Neurobiology (I)
Seminar – 2hr/2cr. Yoshioka Tohru
The aim of this course is elucidation of complex brain function, such as emotion, mood, and memory, by the summation of simple and basic concepts such as homeostasis, membrane potential, wave, synchronization and phosphorylation. (I) ’08-1,’09-1
Prerequisite: n/a
URL: n/a

B41EU1680
Neurobiology Mechanism of Pain Discussion – 2hr/2cr. James Wei Hu
“Special topics in neurobiology mechanism of pain” is a discussion course for graduate students and faculty members who are interested in the basic neurobiology mechanism of pain. The objectives of the course are: (1) to be familiar with classical literature of the field of pain research; (2) to learn actively by participation; (3) to know international scholars of the field. (I)(II) ’08-1, ’08-2
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972pain

B41EM0380
Seminar in Developmental Biology
Seminar – 2hr/2cr. Shyh Jye Lee
(I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

B41EM1060
Techniques in Neurobiology
Discussion – 3hr/3cr. Chen Tung Yen
The summer training camp is an intensive collaborative lab course held once every year. This year this course will take in about 20 students, mostly incoming graduate students from participating PIs’ lab, but also postdocs and undergraduates. The course will run from August 3rd to September 7th, 5 days a week, and >8 hr a day. Final presentation will be held on September 7. By the end of the course, the students not only will know their fellow students very well, they also know the available neurobiology techniques by heart. (I) ’08-1, ’09-1
Prerequisite: n/a
URL: n/a

B42 U1310
Methods in Plant Molecular Biology Research
Lecture – 3hr/3cr. Ke-Qiang Wu
Covers the topics on the methods and approaches used in plant molecular biology. Emphasis on how modern molecular biology
tools have been applied to study various plant biology topics. Lectures are combined with literature reading, students’ presentation and discussion. Towards the end of the semester, each student is also required to write a research proposal. (I) ‘08-1

Prerequisite: n/a
URL: n/a

B42 D0030
Seminar in Plant Science Research
Lecture – 2hr/1cr. Ke-Qiang Wu, Lauraent Zimmerli, Shih-Tong Jeng, Chu-Yung Lin

The objectives of this course are to give students the opportunity to be familiar with the current literature of the plant biology. All students are required to present a research paper and to participate in discussion. (I) ‘09-1

Prerequisite: n/a
URL: n/a

B42EM1601
Discussion in Plant Science (I)
Discussion – 1hr/1cr. Lauraent Zimmerli, Ke-Qiang Wu

Designed to give students the opportunity to present their research proposal and discuss their research progress. All students will be required to give presentations on their research and participate to the discussion. (I) ‘09-1

Prerequisite: n/a
URL: n/a

B42EM1602
Discussion in Plant Biology Research (II)
Discussion – 2hr/1cr. Lauraent Zimmerli

Designed to give students the opportunity to present their research proposal and discuss their research progress. All students will be required to give presentations on their research and participate to the discussion. (II) ‘07-2, ‘08-2

Prerequisite: n/a
URL: n/a

B44EU1220
Topics on Palynology
Seminar/Lab – 3hr/3cr. Su-Hwa Chen

(I) ‘08-1

Prerequisite: n/a
URL: http://ceiba.ntu.edu.tw/971Palynology

B44EU1450
Topics in Organism Evolutionary Developmental Biology
Discussion – 2hr/2cr. Chung-Neng Wang

Understand the trend of organism evolutionary developmental biology in 21st century by reading and discussion the currently released journals and articles. (II) ‘08-2

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/972evodevo

B44EU1560
English Writing in the Biological Sciences
Laboratory – 2hr/2cr. Jer-Ming Hu

A scientific English writing class for biology major students, to be practical, students have to write a manuscript based on their own data during the semester and work together with the lecturers in the writing step by step. (I) ‘08-1

Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971bioeng
B44EU1680
Intertidal Ecology: A Field Study Approach
Seminar – 2hr/2cr. Chan, Kwok Kan
This course will be based on the last year’s Intertidal Ecology (B441620), being conducted in English to teach the basic intertidal ecology and use this system as examples to introduce the basic concepts in population and community ecology, common research methods, statistical techniques and writing skills in ecological studies. (I) ’09-1
Prerequisite: n/a
URL: n/a

B44EU1710
Introduction to the biodiversity of Taiwan
Lecture – 2hr/2cr. J.-M. Hu, H.-W. Yuan, K.-F. Chung
Introduction to the natural history, ecology of flora and fauna in Taiwan, including topics on flowering plants, mammals, birds, amphibian, dolphins/whales, insects, and other invertebrates. GC credit: A8. (II) ’08-2
Prerequisite: General Biology
URL: https://ceiba.ntu.edu.tw/972taiwanbio

B46 M0040
Group Discussion
Discussion – 1hr/1cr. Yung-Shu Kuan
Journals of specific fields are assigned to students to read and discuss in an informal way. Different fields are offered. Each student is allowed to join more than 1 field. To comment the pros and cons of a journal, the questions solved and waited to be solved in the journal as well as the importance of the journal. (I)(II) ’08-2 class 03, ’09-1 class 04
Prerequisite: n/a
URL: n/a

B46 D0310
RNA Biology
Seminar – 2hr/2cr. Guang-Chao Chen
(II) ’07-2
Prerequisite: n/a
URL: n/a

B46ED150
Seminar
Lecture – 2hr/1cr.
(I)(II) ’07-2, ’08-1, ’08-2, ’09-1 Yu-Ling Shih (’07-2); Guang-Chao Chen (’08-1); Yu-Ling Shih (’08-2); Guang-Chao Chen (’09-1)
Prerequisite: n/a
URL: n/a

B46ED0110
Group Discussion
Discussion – 1hr/1cr. Yung-Shu Kuan
Journals of specific fields are assigned to students to read and discuss in an informal way. Different fields are offered. Each student is allowed to join more than 1 field. To comment the pros and cons of a journal, the questions solved and waited to be solved in the journal as well as the importance of the journal. (I)(II) ’08-2 class 03, ’09-1 class 04
Prerequisite: n/a
URL: n/a

B46ED0170
Rotation
Lecture – 2hr/2cr.
(I) ’07-2, ’08-2, ’08-2 Wang, Ting-Fang (’07-2); Tzu-Ching Meng (’08-2)
Prerequisite: n/a
URL: n/a

B46ED0190
Fundamental Chemical Biology and Molecular Biophysics
Laboratory – 4hr/4cr. Jer-Ming Hu
Enhance students’ interdisciplinary knowledge with backgrounds include chemistry, biological chemistry, and
biophysics. Students are expected to require the basic training before moving on to take more advanced course either in chemical biology or in molecular biophysics. (I) '08-1
Prerequisite: n/a
URL: https://ceiba.ntu.edu.tw/971bioeng

B46ED0210
Advanced Chemical Biology
Lecture – 3hr/3cr. Rita P.-Y. Chen
Stresses on organic synthesis and medicinal chemistry. Topics: synthetic methodologies, medicinal chemistry, good examples of Pharmaceuticals. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

B46ED0220
Experimental Molecular Biophysics
Lecture – 3hr/3cr. Kay Hooi Khoo
Emphasize on principles and applications of biophysical instruments. The course topics includes: mass spectrometry, protein crystallography, cryo-electron microscopy, NMR, spectroscopy, and computational biophysics. (II) '07-2, '08-2
Prerequisite: n/a
URL: n/a

B46ED0320
Immunology
Lecture – 2hr/2cr. Wei-Yuan Yang
knowledge and experiment skills from cells and tissues of the immune system, antibodies and antigens, lymphocyte maturation and expression of antigen receptor genes, antigen receptors and accessory molecules of t lymphocytes, antigen processing and presentation to t lymphocytes, etc. (II) '08-2
Prerequisite: n/a
URL: n/a

B46ED0330
Molecular & Cellular Approached
International Program

NTU also have other programs for international students. Those courses focus on the culture and language of Taiwan and also on the aspect that we put emphasize in our academic researching fields. The programs provided are as follows:

- Agricultural Economics Master Program (International Program)
- Bachelor’s Degree Program in Chinese Literature for International Students
- Global MBA
- Institute of Biotechnology
- Institute of Occupational Medicine and Industrial Hygiene
- International Dual/Joint Degree Programs
- Taiwan Study Program
- Taiwan International Graduate Program (TIGP)
Agricultural Economics Master Program (8)

Contact Info:
Program website: http://www.agec.ntu.edu.tw/Web-try/apdm-main.htm

Program Overview:
Agricultural Economics Master Program is a multifaceted effort of the Department of Agricultural Economics, the College of Bio-Resources and Agriculture, National Taiwan University and Taiwan ICDF.

Agricultural development is the crucial factor for a country’s broad-based development, especially for the developing countries. Taiwan’s unique experience in agricultural development can be used as a reference and study model for these countries.

Students learning agricultural economics expertise and agri-business management skills throughout the program will be well prepared for entry level management positions, offered by firms engaging in agricultural production, marketing, and financing.

The program will also enhance students’ grasp of important issues and problems of agriculture, which in turn helps foster their potential for leadership in agricultural policy and agribusiness management.

Students who pursue Master of Science (M.S.) degrees in Agricultural Policy Development and Management are required to complete 31 credits including 6 credits of thesis. This program will take two academic years to fulfill the requirements.

List of courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Macroeconomics</td>
<td>Li-Fen Lei</td>
<td>(I)(II) '08-2, '09-1, '09-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Agribusiness Management</td>
<td>Frank Fu-Shan Liu</td>
<td>(II) '08-2, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisite: Agricultural Economy</td>
</tr>
<tr>
<td>Agricultural Development</td>
<td>Frank Fu-Shan Liu</td>
<td>(I) '08-1, '09-1, '10-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Agricultural Marketing</td>
<td>Cheng-Wei Chen</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Agricultural Policy Analysis</td>
<td>Kuo-Ching Lin, Yu-Hui Chen</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Agricultural Trade</td>
<td>Rhung-Jieh Woo</td>
<td>(II) '08-1, '09-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Applied Microeconomics</td>
<td>Yir-Hueih Luh, Fung-Mey Huang</td>
<td>(I) '08-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Efficiency and Productivity Analysis</td>
<td>Shih-Hsun Hsu</td>
<td>(II) '08-1, '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
</tbody>
</table>
Bachelor's Degree Program in Chinese Literature for International Students (15)

Contact Info:
Program e-mail: Fang-yu HU, fangyu@ntu.edu.tw

Program Overview
National Taiwan University's Department of Chinese Literature has a long history of being a stronghold for international Chinese research. In order to provide international students with an excellent environment to study Chinese, the NTU Department of Chinese Literature will begin offering a "Bachelor's Degree Program in Chinese Literature for International Students" in 2008.

The Bachelor's Degree Program in Chinese Literature for International Students will be taught in Chinese, with 20 students being admitted every year. Students will be required to spend at least four years within the program. The three major guiding principles of the program are as follows:

1.) Language Study—the program will seek to provide adequate language training for students (training will progress from basic to in-depth and from modern to classical Chinese study) in the hope that after four years of intensive study students will attain aural and oral fluency as well as a high level of literacy and writing ability.

2.) A Nurturing of Literary Knowledge—the curriculum will progress from modern to classical literary study and use chronologically ordered literature anthologies to help students achieve a deep knowledge of the Chinese literary style.

3.) Cultural Development—starting from a basic cultural introduction and gradually exploring the depths of ancient culture, the program allows students to gain an in-depth understanding of Chinese cultural traditions.

The varied nature of this program's curriculum design is more than enough to satisfy students hoping to study Chinese culture and can also be used to cultivate students' knowledge and data collection skills in the areas of language, literature, academic training, and research materials. Furthermore, we hope that this substantial academic training and cultural cultivation will serve as a foundation for literary and language studies as well as academic research into the future.

List of courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese Linguistics (1)</td>
<td>Chang Li-li</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Chinese Linguistics (2)</td>
<td>Chang Li-li</td>
<td>(II) '08-2</td>
<td>Lecture – 2hr/2cr. Prerequisite: Chinese Linguistics (1)</td>
</tr>
<tr>
<td>Classical Chinese and Composition(1)</td>
<td>Lee Wen-yu</td>
<td>(I) '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>History of Chinese Literature (1)</td>
<td>Wu Min-min</td>
<td>(I) '09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Introduction to Chinese Characters (Including Calligraphy) (1)</td>
<td>Ting Liang</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Introduction to Chinese Characters (Including Calligraphy) (2)</td>
<td>Ting Liang</td>
<td>(II) '09-2</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
</tbody>
</table>
Bachelor’s Degree Program in Chinese Literature for International students

<table>
<thead>
<tr>
<th>Course</th>
<th>Instructor</th>
<th>Section</th>
<th>Credits/Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Chinese Culture (1)</td>
<td>Perng Meei-ling</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Introduction to Chinese Culture (2)</td>
<td>Perng Meei-lin</td>
<td>(II) ’09-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Modern Chinese and Composition (I) (1)</td>
<td>Lin, Yung-Sheng</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Modern Chinese and Composition (I) (2)</td>
<td>Ko Chia-cian</td>
<td>(II) ’08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Modern Chinese and Composition (II) (1)</td>
<td>Ko Chia-cian</td>
<td>(I) ’09-1</td>
<td>Lecture – 3hr/3cr. Prerequisite: Modern Chinese and Composition (I)</td>
</tr>
<tr>
<td>Introduction to Modern Literature (1)</td>
<td>Ko Chia-cian</td>
<td>(I) ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Introduction to Chinese History and Geography (1)</td>
<td>Fang-yen Yang</td>
<td>(I) ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Chinese (1)</td>
<td>Wu min-min</td>
<td>(I) ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Chinese (2)</td>
<td>Wu min-min</td>
<td>(II) ’08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
</tbody>
</table>
Global MBA

Global MBA (19)

Contact Info:
Program e-mail: mba@management.ntu.edu.tw
Program website: http://www.mba.ntu.edu.tw/

Program overview:
NTU Global MBA program provides students with the knowledge and skills needed to excel in today’s competitive global market.

This is a two year program, most of our courses are offered during the day-time, from Monday to Friday. The program commences in Fall each year. The Fall semester begins in September, and the Spring semester begins in February.

Starting from Fall 2009, a completion of forty-two (42) credits, including six (6) core courses and a six-credit MBA thesis, is required for graduation. It is recommended that students complete the six core courses in the first academic year.

Global MBA students are allowed to take all the English-taught courses at Master/Graduate level offered by NTU College of Management (i.e., the courses with the codes “M” or “U”).

Only courses at Master/Graduate level (courses with "M" or "U" codes) offered by NTU College of Management can be used towards fulfilling G MBA’s graduation requirement.

List of courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Managerial Economics</td>
<td>Hsin-Chang Lu</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Advanced Business English</td>
<td>Yong-Hway Hsi</td>
<td>(I) ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Business Analysis and Valuation</td>
<td>Kuo-Lieh Tseng</td>
<td>(II) ’08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Business English</td>
<td>Yan-Wing Leung</td>
<td>(II) ’07-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Business Ethics &amp; Judgement</td>
<td>Edward Hsieh</td>
<td>(I) ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Capital Market Governance and Valuation</td>
<td>Chung-Fern Wu</td>
<td>(I) ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>China Economy</td>
<td>Tain-Jy Chen</td>
<td>(II) ’07-2</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>China Financial Industry</td>
<td>Louis Kung</td>
<td>(I) ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
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<tr>
<td>Corporate Information System Strategy</td>
<td>Houn-Gee Chen</td>
<td>(I) ’07-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Econometrics</td>
<td>Pei-Cheng Liao</td>
<td>(I)(II) ’07-2, ’08-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Emerging Financial Market</td>
<td>Chung-Hua Shen</td>
<td>(II) ’07-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Entrepreneurship and Innovation</td>
<td>Seng-Cho Chou</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Ethics &amp; Judgment</td>
<td>Seng-Cho Chou</td>
<td>(II) ’08-2</td>
<td>Lecture – 1hr/1cr.</td>
</tr>
<tr>
<td>Financial Management</td>
<td>Ming- Shen Chen</td>
<td>(II) ’07-2, ’08-2</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Course</td>
<td>Instructor</td>
<td>Time Period</td>
<td>Credits/Hours</td>
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<td>-------------------------------------------------</td>
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<tr>
<td>Futures and Options Markets</td>
<td>Yaw-Huei Wang</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>GCP-Global Consulting Practicum</td>
<td>Seng-Cho Chou</td>
<td>(I) '08-1, '09-1</td>
<td>Group Discussion –1hr/1cr.</td>
</tr>
<tr>
<td>GCP-Global Consulting Practicum (II)</td>
<td>Seng-Cho Chou</td>
<td>(II) '08-2</td>
<td>Group Discussion –2hr/2cr.</td>
</tr>
<tr>
<td>Information Management</td>
<td>Wei-Yuan Hsu</td>
<td>(I)(II) '07-2, '08-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>International Business Negotiations</td>
<td>Edward Partington</td>
<td>(II) '08-2</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Leadership Practice</td>
<td>Seng-Cho Chou</td>
<td>(I) '08-1</td>
<td>Group Discussion –2hr/2cr.</td>
</tr>
<tr>
<td>Leadership Practice (II)</td>
<td>Seng-Cho Chou</td>
<td>(I)(II) '08-2, '09-1</td>
<td>Group Discussion –1hr/1cr.</td>
</tr>
<tr>
<td>Marketing Management</td>
<td>Chun-Yao Huang</td>
<td>(I)(II) '08-2, '09-1</td>
<td>Lecture/Discussion –2hr/2cr.</td>
</tr>
<tr>
<td>Managerial Accounting</td>
<td>Chih-Yang Tseng</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture –2hr/2cr.</td>
</tr>
<tr>
<td>Managerial Economics</td>
<td>Hsiou-Wei W. Lin</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture –2hr/2cr.</td>
</tr>
<tr>
<td>Modern Banking Management, Regulation and Public policy</td>
<td>Kuo-Lieh Tseng</td>
<td>(I)(II) '07-2, '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Organization Behavior</td>
<td>Lu Luo</td>
<td>(II) '08-2</td>
<td>Lecture –2hr/2cr.</td>
</tr>
<tr>
<td>Social Entrepreneurship</td>
<td>Edward Hsieh, Seng-Cho Chou</td>
<td>(I) '09-1</td>
<td>Lecture –1hr/1cr.</td>
</tr>
<tr>
<td>Strategic Accounting for High-Tech Industry</td>
<td>Li-Luan Chu</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Strategy Management</td>
<td>Chung-Jen Chen</td>
<td>(II) '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Technology Management</td>
<td>Chung-Jen Chen</td>
<td>(II) '07-2</td>
<td>Lecture – 3hr/3cr.</td>
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<tr>
<td>Thesis Writing</td>
<td>Yan-Wing Leung</td>
<td>(II) '08-2</td>
<td>Lecture – 1hr/1cr.</td>
</tr>
<tr>
<td>Web-Based Managerial and Cost Accounting</td>
<td>Chen, Yuang Sung</td>
<td>(II) '07-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
</tbody>
</table>
Institute of Biotechnology (25)

Contact Info:
Department Office (ntubiotec@ntu.edu.tw)

Program overview
This new institute has just been established on the 1st of August, 2006 and has been taken in PhD students for the academic year 2006. The mission for our institute is to provide great research and teaching environment for the following fields that fits the direction of our national development: Bioinformatics, Nano-Biomedical research, Tissue engineering and Recombinant Medicine, Genomics and Proteomics. Our outstanding faculties have got extensive research experience abroad and have thus formed a strong international collaborative research team. In addition, since the establishment of this new institute, we have been involved in integrating inter-departmental and inter-College teaching and research resources in the fields related to Biotechnology. This power has been catalyzed further by introducing training in Law and Management. Our research and teaching resources has provided the best incubator for the PhD students to become tomorrow’s leaders in both Biotechnology industry and research community.

List of courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epigenetics</td>
<td>Shau-Pin Lin, Shih-Shun Lin</td>
<td>(I)  '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Stem Cell Biology</td>
<td>Hsuan-Shu Li</td>
<td>(I)  '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Structural Biology &amp; Bioinformatics</td>
<td>Chi-Shen Yang, Mong-Hsun Tsai</td>
<td>(I)  '08-1, '09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Immunological Techniques: Antibody Tools</td>
<td>Rong-Huay Juang</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 4hr/3cr.</td>
</tr>
<tr>
<td>Transgenic and Cloning Technology in Animal</td>
<td>Li-Ying Sung</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Special Topics in Plant Biotechnology</td>
<td>Jen-Chih Chen</td>
<td>(II) '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Special Topics in Microbiology</td>
<td>Je-Ruei Liu, Chi-Te Liu</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Frontiers in Biotechnology (I)</td>
<td>Hsuan-Shu Li, Mong-Hsun Tsai, Je-Ruei Liu, Shau-Ping Lin, Jen-Chih Chen, Li-Ying Sung, Shih-Shun Lin, Chi-Te Liu</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture/Discussion – 2hr/1cr.</td>
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<tr>
<td>Frontiers in Biotechnology (II)</td>
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<td>(II) '07-2, '08-2</td>
<td>Lecture/Discussion – 2hr/1cr.</td>
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<tr>
<td>Frontiers in Epigenetic Regulatory Mechanisms</td>
<td>Shau-Pin Lin</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 2hr/2cr.</td>
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<tr>
<td>Special Topics in Stem Cell Application</td>
<td>Hsuan-Shu Li</td>
<td>(I) '08-1, '09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Frontiers in Functional Non-Coding RNAs</td>
<td>Shau-Pin Lin</td>
<td>(II) '07-2, '08-2</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Course</td>
<td>Instructor</td>
<td>Term</td>
<td>Credit</td>
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<tr>
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</tr>
<tr>
<td>Advanced Small RNA and Mechanism of Gene Silencing</td>
<td>Shih-Shun Lin</td>
<td>(I) '08-1, '09-1</td>
<td></td>
</tr>
<tr>
<td>Special Topics in Microbes and Environmental Issues</td>
<td>Chi-Te Liu</td>
<td>(II) '09-2</td>
<td></td>
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<tr>
<td>Special Topics in Microbial Gene Regulation and Expression</td>
<td>Je-Ruei Liu</td>
<td>(I) '09-1</td>
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<tr>
<td>Production of Recombinant Proteins</td>
<td>Je-Ruei Liu</td>
<td>(II) '07-2, '08-2</td>
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<tr>
<td>Regenerative Medicine</td>
<td>Hsuan-Shu Li</td>
<td>(II) '07-2, '08-2</td>
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<tr>
<td>Special Topics in Microarray Technologies</td>
<td>Mong-Hsun Tsai</td>
<td>(II) '07-2, '08-2</td>
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<tr>
<td>Special Topics in Micorbial Biotechnology</td>
<td>Je-Ruei Liu</td>
<td>(I) '08-1</td>
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<tr>
<td>Special Topics In Environment Microbial Engineering</td>
<td>Chi-Te Liu</td>
<td>(I) '09-1</td>
<td></td>
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<tr>
<td>Molecular Signal Transduction in Plant-Microbe Interactions</td>
<td>Chi-Te Liu</td>
<td>(I) '09-1</td>
<td></td>
</tr>
<tr>
<td>Seminars in Epigenetic</td>
<td>Shau-Pin Lin</td>
<td>(II) '07-2</td>
<td></td>
</tr>
<tr>
<td>Special Topic in Reprogramming</td>
<td>Shau-Pin Lin</td>
<td>(II) '07-2</td>
<td></td>
</tr>
<tr>
<td>Introduction of Biochip</td>
<td>Meng-Hsun Tsai</td>
<td>(I) '08-1, '09-1</td>
<td></td>
</tr>
<tr>
<td>Seminars in Bioinformatic and Biochip</td>
<td>Mong-Hsun Tsai</td>
<td>(I) '08-1</td>
<td></td>
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<tr>
<td>Genetics and Epigenetics in Germ and Stem Cells</td>
<td>Shau-Pin Lin</td>
<td>(II) '07-2, '08-2</td>
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<tr>
<td>Microarray Experiment and Data Analysis</td>
<td>Mong-Hsun Tsai</td>
<td>(II) '07-2, '08-2</td>
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<tr>
<td>Advanced Animal Biotechnology</td>
<td>Li-Ying Sung</td>
<td>(I) '08-1, '09-1</td>
<td></td>
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<tr>
<td>Frontiers in Plant Molecular Breeding</td>
<td>Jen-Chih Chen</td>
<td>(II) '07-2</td>
<td></td>
</tr>
</tbody>
</table>
Institute of Occupational Medicine and Industrial Hygiene (10)

Program overview
The mission of the Institute is to advance the health of all people in occupational and community settings in Taiwan, Asia and around the world through teaching, research and services in occupational and environmental health. Faculty members in the institute investigate causes, risks, mechanisms, biomarkers, and prevention measures of environmentally and occupationally related health issues, provide advanced education programs of occupational health with master and doctoral degrees, and provide scientifically based public health services to the public, governments, industries, and the labors. Research approaches range from the molecular to the epidemiologic, in physical scales of nano- to macro-, and by multiple disciplines of physical, chemical, biological, sociobehavioral sciences and ergonomics.

List of courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar in Environmental And Occupational Medicine</td>
<td>Yue-Liang Guo</td>
<td>(I) ’08-1, ’09-1</td>
<td>Seminar – 2hr/2cr.</td>
</tr>
<tr>
<td>Methods of Epidemiologic Research</td>
<td>Jung-Der Wang</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>International Environmental and Occupational (I)</td>
<td>Yue-Liang Guo</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Special Topic on Environmental Occupational Health (I)</td>
<td>Tsun-Jen Cheng</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 2hr/2cr.</td>
</tr>
<tr>
<td>Special Topic on Environmental Occupational Health (II)</td>
<td>Tsun-Jen Cheng</td>
<td>(II) ’08-2</td>
<td>Lecture/Seminar – 2hr/2cr.</td>
</tr>
<tr>
<td>Sustainable Health and Environment</td>
<td>Chang-Chuan Chan</td>
<td>(I) ’09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Environmental and Occupational Health Seminar (II)</td>
<td>Yaw-Huei Hwang</td>
<td>(II) ’07-2</td>
<td>Seminar – 2hr/1cr.</td>
</tr>
<tr>
<td>Environmental and Occupational Health Seminar (IV)</td>
<td>Pau-Chung Chen</td>
<td>(II) ’07-2</td>
<td>Seminar – 2hr/1cr.</td>
</tr>
<tr>
<td>Exposure Assessment</td>
<td>Chang-fu Wu</td>
<td>(II) ’09-2</td>
<td>Seminar – 2hr/1cr.</td>
</tr>
<tr>
<td>Advanced Topics in Industrial Hygiene</td>
<td>Yaw-Huei Hwang</td>
<td>(II) ’09-2</td>
<td>Seminar – 1hr/1cr.</td>
</tr>
</tbody>
</table>
International Dual/Joint Degree Programs

Contact Info:
Program website: www.oia.ntu.edu.tw

Program Overview
International dual/joint degree programs are to promote culture learning, academic exchange and degree acquisition. Those students who are interested in these programs have opportunities to study and obtain degrees in world-renowned universities. Meanwhile, international students are also allowed to join the programs at National Taiwan University (NTU). The vital student exchanges will strengthen the internationalization of academic collaboration.

These programs include: PhD, Master and Bachelor Degrees

1. Bachelor Degrees:
   Students shall study related majors for the dual/joint bachelor degrees. For example, students are required to study and conduct researches in the partner university for 18 months and to obtain at least 60 credits before graduation in terms of the double degree program between Department of Political Science, National Taiwan University and School of Political Science & Economics, Waseda University of Japan.

2. Master Degrees:
   Students shall study related fields in graduate schools overseas. And with the dual degree master program between Department of Civil Engineering, National Taiwan University, Taiwan and School of Civil and Environmental Engineering, Nanyang Technological University, Singapore, students are required to study for at least two academic semesters each in both universities for the first two years.

3. PhD Degrees:
   The agreement of collaborative guidance on the doctoral dissertation shall be established by graduate institutes or supervisors from both universities. NTU students have to study and conduct researches first at NTU and then in partner universities.

Reference: Guidelines for International Dual Degree Programs
NTU endeavors to develop international dual/joint degree programs with partner institutions.

How to Apply?
1. Please refer to Guidelines for International Dual Degree Programs.
2. Students are required to study at least two semesters at NTU before application. Overseas Chinese and international students are also allowed to apply for the programs. But they shall not apply for any university in their home countries.

List of partner Universities:

<table>
<thead>
<tr>
<th>Countries</th>
<th>Partner Universities</th>
<th>Types of Degrees</th>
<th>Student Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 France</td>
<td>University Pierre et Marie Curie</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>2 France</td>
<td>University of Paris-Sud 11</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>3 France</td>
<td>University Paris 13</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>4 France</td>
<td>Agro Paris Tech</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>5 France</td>
<td>University Joseph Fourier (Grenoble 1)</td>
<td>PhD</td>
<td>8</td>
</tr>
<tr>
<td>6 France</td>
<td>University of Science and Technology of Lille</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>7 France</td>
<td>Ecole Normale Superieure de Cachan</td>
<td>PhD</td>
<td>2</td>
</tr>
<tr>
<td>8 France</td>
<td>Nice Sophia Antipolis University</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>9 France</td>
<td>University of Montpellier 2</td>
<td>PhD</td>
<td>3</td>
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</table>

-121-
<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>University</th>
<th>Degree</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>10</td>
<td>France</td>
<td>Cergy-Pontoise University</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Switzerland</td>
<td>University of Geneva</td>
<td>Master</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Netherlands</td>
<td>Delft University of Technology</td>
<td>PhD</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Japan</td>
<td>Waseda University</td>
<td>Master &amp; Bachelor</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>Singapore</td>
<td>Nanyang Technological University</td>
<td>Master</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td>Thailand</td>
<td>Asian Institute of Technology</td>
<td>Master</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>Vietnam</td>
<td>University of Civil Engineering, Hanoi, Vietnam</td>
<td>Master</td>
<td>17</td>
</tr>
<tr>
<td>17</td>
<td>US</td>
<td>University of Illinois, Urbana-Champaign</td>
<td>Master &amp; Bachelor</td>
<td>28</td>
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<tr>
<td>18</td>
<td>US</td>
<td>The University of Texas at Dallas</td>
<td>Master/ Bachelor</td>
<td>12</td>
</tr>
<tr>
<td>19</td>
<td>US</td>
<td>Washington University</td>
<td>Master</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>US</td>
<td>University of Delaware</td>
<td>PhD &amp; Master &amp; Bachelor</td>
<td>0</td>
</tr>
</tbody>
</table>
Taiwan Study Program

Taiwan Study Program (5)

Contact info:
Ms. Wan Ling Chang (ntugitl@ntu.edu.tw)
Program Website: http://www.gitl.ntu.edu.tw/prog1.htm

Program Overview:

To broaden the horizon of the students of National Taiwan University and to give them a deeper understanding of the different fields of research related to Taiwan, the Taiwan Study Program provides a solid foundation on “Taiwan Study” for students to learn a variety of research methods and epistemological skills. This program includes 10 fields: literature, languages, arts, history, politics, economy & society, ethnic group & culture, natural environment, biology & agriculture, technology and medical treatment & public hygiene.

Although the majority of courses are conducted in Chinese, we also provide English language courses for international students. For instance, in the second semester 2009, we have three courses in English provided for undergraduate students: Introduction to the Biodiversity of Taiwan, Scientific Taiwan, and Introduction to the Music of Taiwan. Besides, there is another one better for graduate students: Postcolonial Studies: Sites of Memory.

These newly coordinated serial courses are to serve as windows to let international students know about Taiwan from different aspects. The courses are taught in English by experts of different disciplines at NTU. The uniqueness is that it has a humanity–science balanced design, covering topics in natural environment, culture, and technology advances of Taiwan. It provides general introduction to the geography, geology, and biodiversity of Taiwan, and the culture and influences of language, politics, economics of Taiwan under globalization; and several courses for the development of technology and agriculture.

The courses will also serve as a cultural exchange platform. Each class will have both local and international students, so that it can provide cross-cultural communication and discussion. For some courses, off-campus touring to museums or field class will be provided.

The course series is part of the Taiwan Study Program, where most other courses are taught in Mandarin. Information can be found at http://www.gitl.ntu.edu.tw/eng/intro.htm.

Introduction to the Biodiversity of Taiwan
Lectured by Jer-Ming, Hu / Time: Tue. 10:20 - 12:10 / Classroom: Rm. 4C, Life-Science BLDG.

Taiwan is a mountainous island with various habitats which nurse many kinds of organisms. Although Taiwan is known for high density of population, natural vegetation still covers 68% of the entire island. About a quarter of the 4000 plant species are endemic, while over 50,000 animal species are known to Taiwan. There are 114 mammal species, 543 bird species, 99 reptiles, 38 amphibians, 2800 fish, and around 20,000 named insects in Taiwan. The rich biota in Taiwan largely owes to its diverse ecosystems, but it also reflects the complicate natural history that shows organisms came from various neighboring regions, including East Asian continent, Japan, and South East Asia islands.

Biodiversity of Taiwan does not have a pre-requisite, but we highly recommend students took some general biology courses for basic biological terminology. The content includes the introduction to the natural history of Taiwan, the flora and fauna of Taiwan, and also the exotic species and conservation issues in Taiwan. The objective of this course is to provide an overview of the biodiversity in Taiwan, including plants, insects, and animals, in order to let students know the beauty of Taiwan's biota.

Scientific Taiwan
Lectured by Horn Jiunn, Sheen / Time: Tue. 15:30 - 17:20 / Classroom: Rm. 113, Inst. of Applied Mechanics

During the past few decades of rapid economic development, the industrial landscape of Taiwan has changed dramatically. The modern, high-tech, and urban face of this island is
nowadays much better known around the world than that of our more traditional, low-tech countryside. The achievements were contributed by the encouragement and financial support of the government and the hard-working and innovations of the private enterprises.

Taiwan’s total land area is only about 36,000 km², but it amazingly has many world-leading technologies in the following technology areas: IC related industry, display industry, computer and information industry, nano and biomedical technology, agriculture and ecological research, and traditional industry transformation, etc. These conspicuous results present innovative creation ability in Taiwan and are highly interesting for people to explore.

This introductory course intends to provide students a basic understanding to learn the technological creation results of Taiwan, as well as to develop and discover what their research and career interests are.

**Introduction to the Music of Taiwan**

Lectured by Ying-fen, Wang and Szu-wei, Chen / Time: Tue. 10:20-13:10 / Classroom: Rm. 105, Lexue BLDG.

This course is especially offered for foreign students as part of the Taiwan Study Program but is also open partially to local students. It will introduce students to the myriad of musical genres and their historical, political, and social contexts. Genres to be introduced include aboriginal music, traditional music of the Hoklo and Hakka peoples and of the mainlanders, and finally popular music. Emphases will be placed on auditory and participatory experiences through in-class workshops by invited performers, concert attendance, fieldtrips, homework assignments, and group fieldwork projects.

The purpose of the course is to help students gain a basic knowledge of the music of Taiwan and its close relationship to Taiwan history and society. It also aims to heighten students’ awareness of the important role music plays in their daily life in Taiwan and enhance their understanding of Taiwan through music.

Each class meeting will consist of a two-hour lecture by the instructor followed by one-hour discussion session led by one of the two teaching assistants. The students are expected to familiarize themselves with the sounds of the various musical genres in Taiwan.

**List of courses:**

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploring Taiwan—Geographical Environment and Resources</td>
<td>Lan-Hung Chiang (Dept. of Geography and the College of Science)</td>
<td>(I)'09-1</td>
<td>Lecture – 3hr/3cr. See p.31</td>
</tr>
<tr>
<td>Languages in Taiwan</td>
<td>I-Wen Su (Grad. Inst. of Linguistics)</td>
<td>(I)'09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Introduction to Taiwan Modern and Contemporary Culture</td>
<td>Yee-Sin Chi (Grad. Inst. of Taiwan Literature)</td>
<td>(I)'09-1</td>
<td>Lecture – 3hr/3cr.</td>
</tr>
<tr>
<td>Scientific Taiwan</td>
<td>Horn Jiunn, Sheen (Grad. Inst. of Applied Mechanics)</td>
<td>(I)'09-1, (II)'09-2</td>
<td>Lecture – 2hr/2cr. See p.52</td>
</tr>
<tr>
<td>Introduction to the Biodiversity of Taiwan</td>
<td>Jer-Ming, Hu (Grad. Inst. of Ecology &amp; Evolutionary Biology)</td>
<td>(II)'09-2</td>
<td>Lecture – 2hr/2cr. See p.110</td>
</tr>
<tr>
<td>Introduction to the Music of Taiwan</td>
<td>Ying-fen, Wang and Szu-wei, Chen (Grad. Inst. of Musicology)</td>
<td>(II)'09-2</td>
<td>Lecture and Discussion – 3hr/3cr.</td>
</tr>
<tr>
<td>Postcolonial Studies: Sites of Memory</td>
<td>Guy Beauregard (Dept. of Foreign Languages &amp;</td>
<td>(II)'09-2</td>
<td>Lecture – 3hr/3cr.</td>
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</tbody>
</table>
Courses in preparation (may be offered 2010)

<table>
<thead>
<tr>
<th>Title</th>
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</tr>
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<tbody>
<tr>
<td>Confucianism</td>
<td>Chao-ying Chen (Dept. of Chinese Literature)</td>
</tr>
<tr>
<td>Society and Culture in Taiwan</td>
<td>Theresa Der Lan Yeh (Dept. of Foreign Languages &amp; Literatures)</td>
</tr>
<tr>
<td>Agriculture of Taiwan</td>
<td>Hu-Shen Lur (Dept. of Agronomy)</td>
</tr>
<tr>
<td>Tea and tea culture in Taiwan</td>
<td>Iou-Zen Chen (Dept. of Horticulture)</td>
</tr>
<tr>
<td>Exploring Taiwan—Geographical Environment and Resources</td>
<td>Lan-Hung Chiang (Dept. of Geography and the College of Science)</td>
</tr>
<tr>
<td>Culture and arts in Taiwan</td>
<td>TBA</td>
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</tbody>
</table>

Summer program - Biodiversity, agriculture and culture of Taiwan (BACT)

Taiwan, situated in subtropical and tropical Asia, is an island of 36,000 km² and with coastal line stretching 1,100 km. The highest mountain, Yushan, is about 4,000 m. Due to the huge elevational difference, the climates are very different along the altitudinal gradient, producing a diverse and abundant wild fauna and flora. Geologically speaking, since Taiwan is a relatively young island, volcanic activity, gorge cleaving and rock formation are wonders still in action today. The Chinese culture that has been well preserved on the island has also intrigued its foreign visitors. With that, the National Taiwan University is offering you the "Biodiversity, Agriculture, and Culture of Taiwan- A Summer Program" for an experience in a world you never knew. All the courses will be taught in English.

During the 32 days course, we will bring you from the ocean to low, mid, and high elevation, where you will see why and how an island as small could be endowed with such high biodiversity. We'll also arrange for you to visit the world famous National Palace Museum, to get hands-on experiences with the bamboo and tea culture, as well as the Chinese calligraphy and language. You'll have taste of the Taiwanese delicacies and even the chance to make some yourself! Shopping and eating at night market is another activity for you to explore. If you need more information, please contact center for international agricultural education and academic exchanges.(+886-2-33664215)

List of summer courses:

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity, agriculture and culture of Taiwan</td>
<td>Shu Jen Wang (Department of Agronomy)</td>
<td>Summer</td>
<td>2009/6/13-7/6 (3wks)</td>
</tr>
</tbody>
</table>
Taiwan International Graduate Program (TIGP) (22)

**Contact Info:**
TIGP Admissions Office (tigp@gate.sinica.edu.tw)
TIGP Program website at Academia Sinica: http://tigp.sinica.edu.tw/

**Program overview**
To keep up with the pace of today’s fast evolving scientific and technological world and to promote the internationalization of higher education in Taiwan, Academia Sinica established the Taiwan International Graduate Program (TIGP) in 2002, in collaboration with a consortium of key national research universities. The interdisciplinary Ph.D. programs offered by TIGP are designed to provide advanced scientific training and research environment for those who wish to do advanced research, to think critically and experience a mature international academic setting. Since its inception, under the stewardship of the successive directors, TIGP has grown and expanded on both the number of inter-disciplinary programs and the number and global distribution of students – from 2008 fall semester on, there will be 246 students from around 28 countries studying in TIGP.

NTU belongs to one of the TIGP partner institutions of Academia Sinica. The table below indicates the courses provided by NTU in the TIGP program.

<table>
<thead>
<tr>
<th>Title</th>
<th>Instructor</th>
<th>Sem.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar on Advanced Special Topics (I) (TIGP)</td>
<td>Ting-Kuo Li</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 2hr/1cr. See p.24</td>
</tr>
<tr>
<td>Seminar On Advanced Special Topics (II) (TIGP)</td>
<td>Ting-Kuo Li</td>
<td>(II) ’08-2, ’09-2</td>
<td>Lecture – 2hr/1cr. See p.24</td>
</tr>
<tr>
<td>Nano Science and Technology-An Overview (TIGP) (1)</td>
<td>Chia-Seng Chang, Chia-Fu Chou</td>
<td>(I) ’08-1, ’09-1</td>
<td>Lecture – 3hr/3cr. See p.24</td>
</tr>
<tr>
<td>Nano Science and Technology-An Overview (TIGP) (2)</td>
<td>Ting-Kuo Li</td>
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Degree Programs Open to International Students in Academic Year 2010/11

Bachelor’s degree = B, Master’s degree = M, PhD degree = D

Red: Programs taught in English 紅色標記為英語授課學程

Blue: Enough English courses to satisfy graduation requirements.

藍色標記，有足夠的英語授課課程可滿足畢業要求。

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Hua Hung Hy 越南 中國文學系
很高興能夠在臺大唸書，今年畢業了但是看到了很多新臉孔，希望以後會有越來越多同學到臺灣唸書，讓外籍生這個大家庭的成員越來越多，我們將來能在世界舞台上再見。
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### 社會科學院  College of Social Sciences

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* 地震工程學程，欲修習學位者，須申請土木系結構組碩士班，或土木系博士班。

**Earthquake Engineering:** Degree students who wish to study earthquake engineering must apply for admission to the Master's program in the Structural Engineering Division of the Department of Civil Engineering, or as a PhD student under the Department of Civil Engineering.
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### 學術資訊

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### 法律學院

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## Life Science College

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National Taiwan University

2010 Summer+ Programs

Exploring Taiwan @ NTU
Summer Program for Laboratory Research & Culture

Program Benefits

It gives students the opportunity and the resources to engage in laboratory research at some of NTU’s modern, well-equipped laboratories. This research without borders concept coupled with Exploring Taiwan courses allows students a broad and well-rounded summer experience. English is the preferred medium of communication and research language.

Who should Apply

Junior year and above, including Masters and PhD candidates (includes overseas Chinese) currently studying in domestic and international institutions, as well as students from partner schools in China.

Laboratories

Departmental labs available include: College of Science, Electrical Engineering & Computer Science, Engineering, Bio-Resources and Agriculture, Life science and Public Health College of Science.

Contact Information

Ear Lu
earlu@ntu.edu.tw
Manager, Study Abroad Programs
Tel: 886-2-33662007#228
Office of International Affairs,
National Taiwan University,
No. 1, Section 4, Roosevelt Road, Taipei 106, Taiwan.

Dates: July 1st till August 11th

Application Fee: USD 500 (non-refundable)

Tuition Fees:
US $3,000 all inclusive.
US $2,800 for partner schools std.
US $2,700 early bird discount
*before March 31st
This includes an optional US$ 220 for accommodation

Services: The tuition fee includes expenses for lectures, laboratory use, study materials and resources, orientation and cultural events, accommodation, insurance and 3-day tour.

Credits:
Lab (3 credits) + Exploring Taiwan (18 hours/1 credit)
*students from quarter system universities will be awarded 5 credit points.

Housing: Provided by BOT Shui-Yuan Dormitory, offering single rooms within an on-campus student residential complex, equipped with sports facilities, spacious communal areas.

Application Deadline: April 30th
(Early birds before March 31st)

Detailed information about the program is available on our website at http://www.oia.ntu.edu.tw
National Taiwan University is Taiwan’s most prestigious and comprehensive university, home to 5 national research centers, and the pinnacle of the Chinese world and bastion of Chinese culture. NTU was founded in 1928, offers a broad range of academic degrees from its 11 colleges, boasts a student body of more than 33,000, who come from over 60 different countries.

## Exploring Taiwan @ NTU

Summer Intensive Program for Chinese & Culture

It couples the world renowned International Chinese Language Program (ICLP) with a NTU’s extensive Exploring Taiwan courses. Students will gain a unique insight into the Chinese language as well as a deeper understanding of Taiwan’s cultural, historical and social heritage. Exploring Taiwan courses are conducted in English.

### Dates: July 1st till July 31st

### Application Fee: USD 500 (non-refundable)

### Tuition Fees:
- US $3,000 all inclusive.
- US $2,800 for partner schools student.
- US $2,700 early bird discount *before March 31st

This includes an optional US$ 220 for accommodation

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(Early birds before March 31st)

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### Who should Apply

International students (include overseas Chinese) currently studying in domestic and international institutions, as well as enrolled exchange students at NTU.

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### Contact information

Jung-Chen Chen
jcchen2006@ntu.edu.tw
Manager, Study Abroad Programs
Tel: 886-2-33662007#225
Office of International Affairs, National Taiwan University, No. 1, Section 4, Roosevelt Road, Taipei 106, Taiwan.

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Detailed information about the program is available on our website at [http://www.oia.ntu.edu.tw](http://www.oia.ntu.edu.tw)
For any question about course content and credits, please contact the Office of Academic Affairs. Any feedback about this handbook can be directed to the Office of International Affairs.