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Doc...
Transcending

With the rapid spread of higher education, the scarcity of government resources, and the intense competition among Taiwan’s more than one hundred universities, Tamkang University must now emphasize its distinguishing strengths to further burnish the Tamkang brand. Over the years, TKU has experienced Four Waves of Development--“the Foundational Period, balancing quality and quantity,” “the Positioning Period, emphasizing quality,” “the Uplifting Period, featuring strategic academic internationalization,” and “the Transformational Period, involving diversification, in line with the times”. These waves have led TKU into a comprehensive university with four distinct campuses: the Tamsui Campus, the Taipei Campus, the Lanyang Campus, and the Cyber Campus. On the 67th anniversary of the school, we now with the help of our many alumni celebrate the advent of the Fifth Wave, displaying a spirit of perseverance and transcendence, as symbolized by our new Hsu Shou-Chlien International Conference Center.

During the past sixty-seven years, TKU has practiced four models of governance: the Collegial model, the Bureaucratic model, the Political model, and the Market model. They jointly help promote the Total Quality Management. Previously, in my featured article, “Tamkang, the Fourth Wave”, I pointed out the need to promote the Three Circles of Curricula—professional, general education, and extracurricular curricula—to put into practice the Five Disciplines of Education of “conduct, intelligence, physical education, teamwork, and beauty”. In this decade, quite a number of students went effectively under the nurturing influence of “Triple Objectives of Education”: Globalization, Information-oriented Education, and Future-oriented Education. They have equipped themselves with the core values of the “Three Circles and Five Disciplines of Education” to truly possess “Excellence with a Soul.” They now become the mainstays of the nation and society.
During the past sixty-seven years, TKU has practiced four models of governance: the Collegial model, the Bureaucratic model, the Political model, and the Market model. They jointly help promote the Total Quality Management. Previously, in my featured article, “Tamkang, the Fourth Wave”, I pointed out the need to promote the Three Circles of Curricula—professional, general education, and extracurricular curricula—to put into practice the Five Disciplines of Education of “conduct, intelligence, physical education, teamwork, and beauty”. In this decade, quite a number of students went effectively under the nurturing influence of “Triple Objectives of Education”: Globalization, Information-oriented Education, and Future-oriented Education. They have equipped themselves with the core values of the “Three Circles and Five Disciplines of Education” to truly possess “Excellence with a Soul.” They now become the mainstays of the nation and society.

W. Chan Kim and Ren Mauborgne stated that “...understanding the context and right strategic moves is the key to success.” The long-term performance of Tamkang has already received affirmation from all walks of life. And, our building of a conference center that reflects our worldview, will not only raise the profile of our research, but render better administrative services. This and other high quality innovations, in line with the times, duly bring into full play the “Matthew Effect”. They set us on a new Sigmoid-curve arching towards the next wave’s peak.

In the Age of the Fox, typified by intense change and transformation, we need to maintain our hold on the operating characteristics of TKU. We will base our strategy on the emerging trends in higher education. We should continue to take “simplicity, truthfulness, firmness, and perseverance” as the essence and accordingly deepen “Tamkang Culture.” We encourage every Tamkangian to “establish a firm foothold at Tamkang University, hold the world in view, grasp the latest information, and create a brighter future.” We encourage all the faculty members and students at Tamkang to meet all sorts of challenges, and to spare no efforts in carrying on our glorious mission hand-in-hand. By so doing, we shall continue to enrich the Five-tiger Hill Saga.
Organization

Message from the Chairperson

Tamkang University (TKU) has used a succession of waves as the transitional hub for all of its administrative development. In 2017 TKU opened a new epoch “The Fifth Wave” with “To Embrace a Smart Future”. Looking back, “the First Wave” unfolded the threefold foundational policy of Global Perspective, Informational Literacy, and Vision for the Future; “the Second Wave” advanced Total Quality Management (TQM); “the Third Wave” promoted international academic resources; “the Fourth Wave” ushered in the management thinking of the Market model which were integrated with the original Collegial model, Bureaucratic model, and Political model to become the Four management models, shaping four campuses.

The Fourth Wave took the Palace-style Buildings as an image to construct the House of Quality of TKU to link up with the mission of “To maintain Tamkang’s venerable heritage, create a positive influence on society, and nurture talented, ambitions professionals.” Utilize the six strategies: “Wave-by-Wave Development and Four Distinct Campuses,” “The Three Circles and Five Disciplines of Education and nurture excellence,” “TKU’s Triple Objectives and create an academic kingdom,” “Setting up the Sigmoid Curve and activate the Second Curve,” “Promoting the Matthew Effect and strive for social resources,” “Blue Ocean Strategy and create competitive advantage,” to establish the direction of development. Develop the participation of everyone and sustain the spirit of improvement, adjust the organizational culture so as to continue the outstanding school performance to win the 19th National Quality Award.
The World Economic Forum announced in the 2018 Global Talent Competitiveness Index (GTCI) that Singapore leaped into the second position in the world. The key characteristic lies in possessing a perfect educational system which is able to meet the needs of the job market through collaborative efforts. TKU was founded 68 years ago and has nurtured students with the Three Circles Curricula, Five Disciplines of Education, and the Eight Essential Qualities. By promoting the forward thinking of Triple-Objective Education, TKU is capable of keeping pace with the times while possessing complete Tamkang DNA and earning the first place for 21 consecutive years in Cheers Business Magazine survey of the most favored private university students by enterprises. TKU in the future shall continue producing the most favored students by businesses and most outstanding students to promote the excellence of Tamkang Culture. Together with the support of TKU alumni worldwide, we shall establish a superbly outstanding, comprehensive world-class university.

From the Fourth Wave to the Fifth Wave, TKU has used the five general trends of a macroscopic view policy, winning leadership team, high quality faculty and student body, sufficient resources and facilities, and clear-cut performance indicators to be the school goals responding to the changing 21st century economy, technology and industry. Using the “Map of the Learning Value Chain,” TKU has set up the student as the core while allowing the faculty and administration to support mutually and grow collectively. TKU has planned a systematic, diverse faculty improvement and encourages the overall development of teaching and academic career. TKU has implemented an overall examination standard of the curriculum, instruction and assessment mechanism in order to improve the quality of learning and teaching. With the aim of producing an industry-university environment that “knowledge and skills progressing collaboratively” TKU has strengthened the ability of the faculty to do research and development and the ability of students to obtain employment and thus to create another academic kingdom with a new Sigmoid Curve.
Members of Tamkang University's Thirteenth Board of Trustees.

Polly S. Chang  
Trustee

Charles C. Lin  
Trustee

Hong-Shang Hong  
Trustee

Steve Lee  
Trustee

Kun-Yen Lee  
Trustee

Sush-Der Lee  
Trustee

Yi-Pin Chien.  
Trustee

Wan-Chin Tai  
Trustee

Mei-Lan Wang  
Supervisor
TKU President’s Greetings

Tamkang University (TKU) was founded in 1950 and supported the Triple Objectives of Education promoted by Founder, Dr. Clement C. P. Chang; and passing through the Four Waves of development: "Foundational period," "Positioning period," "Uplifting period" and "Transformational period," the four-in-one integrated campuses of Tamsui, Taipei, Lanyang and Cyber were constructed thus forming the stable foundation of Tamkang. In November of 2017 the Hsu Shou-Chlien International Conference Center was officially opened through the donations of the TKU alumni; this continues the excellent heritage of Tamkang culture. With the quick infusion of new power, the new course of development of the Fifth Wave was launched. Moreover, the Fifth Wave of Tamkang takes “To Create A Great Tamsui; To Embrace A Smart Future” as its medium range vision.

As for the aspect of planning the teachers’ teaching and the curriculum, TKU has without exception upheld the concept of “the learner is the center.” From the first mile of incoming new students to the last mile of the graduating seniors, and again to the first mile of facing job employment or starting a business, all require different stages of learning demands, and TKU has created a comprehensive learning plan and built a “student learning value chain” for students in their four undergraduate years. As for the aspect of students’ learning, TKU mainly adopts the “Three Circles Curricula”: professional curriculum, general curriculum, and extracurricular curriculum, and also honors program, cross-field courses, employment programs and capstone courses as auxiliaries. TKU has not only achieved the effectiveness of intensive professionalism, learning application and advancement, and unified learning, but also has been able to deepen the five Educational Disciplines of “conduct, intelligence, physical education, teamwork, and beauty” to foster in students the possession of the eight essential qualities of a Global Perspective, Informational Literacy, a Vision for the Future, Moral Integrity, Independent Thinking, a Cheerful Attitude and Healthy Lifestyle, a Spirit of Teamwork and Dedication, and a Sense of Aesthetic Appreciation-to become Tamkang people expressing excellence with a soul.
In 2018 the British higher educational research company, Quacquarelli Symonds, placed TKU the fourth time in Asia’s best university rankings; from among the seven indicators, the proportion of international students, the proportion of foreign exchange students, the proportion of Taiwan students going abroad as exchange students have grown significantly. This is an obvious concrete expression of the long term promotion of the ideal of Globalization. The present number of established sister-school relations this year already amounts to 207 schools in 36 countries extending over five continents of the world; there are transnational double degree programs with 21 schools from six nations, and there are 2,054 overseas degree students from 75 nations. In 2015 TKU earned the Outstanding Internationalization Award from the Ministry of Education and thus becoming a model school for internationalization.

After TKU steps into the fifth wave, the Triple Objectives of Globalization, Information-oriented Education, and Future-oriented Education will adopt a balanced development. In 2018 the “Tamkang Clement and Carrie Chair” was established with the hope of being able to promote more internationally renowned scholars to give lectures, to engage in intensive lectures series and to do cooperative research thus promoting Tamkang’s position on the stage of the global village. As for the Information-oriented Education, TKU will take “intellect” as its core spirit, implement a digital transformation, create a smart campus 2.0, utilize the new concepts of smart technology and service design including big data, artificial intelligence, mobile computing, cloud computing, and internet of things. Upon earning the National Quality Award for the Total Quality Management System, TKU leads in the area of advanced smart technology in teaching, administration, and service, advancing organizational activation, effective utilization of human resources, upgrading service quality and creating value added letting the entire faculty, staff, student body and alumni amply feel convenience, safety, excellence and well-being. The Future-oriented Education is located in having the characteristic of social responsibility in the diversity of “Collaborative Foresight”; this continues refining future studies courses, upgrading teaching pedagogy in order to strengthen the clear understanding of students in their Future-oriented Education and competency development.

In the “Top 2,000 Enterprises’ Favorite College Graduates” survey conducted by Cheers Business Magazine, in 2018, TKU has ranked first among all private universities continuously for 21 consecutive years and ninth place among all institutes of higher learning in Taiwan. In the proportion of the survey’s nine main categories, among the private universities TKU was the first place in eight out of nine categories. In the rankings of Taiwan's best university for 2018 by Global Views Monthly among the five main items: social influence, academic accomplishment, teaching performance, degree of internationalization, and promotion and income from industry and academia, in the 34 indicators of the investigation, TKU earned eighth place nationwide for social influence, fourth place for the degree of internationalization, and business category. TKU is happy to have this outstanding performance, yet this urges us to double our efforts in the future to add value to academic professionalism, strengthen teaching, boost industry and academia cooperation, and establish a teaching ecosystem of innovative entrepreneurship. With the foundation of Tamkang Culture and the accomplishments of the Founder and other successive presidents, the good achievements should again be carried on by building upon the initial successes and by taking the spirit of the old to create the new so as to erect a superb, first-rate, world-class comprehensive university.

Dr. Huan-Chao Keh, President
Dr. Chii-Dong Ho  
Vice President for Academic Affairs

Dr. Shi-Feng Chuang  
Vice President for Administrative Affairs

Dr. Kao-Cheng Wang  
Vice President for International Affairs

Dr. Jyh-Horng Lin  
Vice President for Lanyang Campus
The Tamsui Campus was built with the goal of establishing a comprehensive research university, one that “creates knowledge.” It now comprises 7 colleges, 46 departments, 48 masters programs, 24 Executive Master’s Programs, 19 doctoral programs, and 12 research centers. The Tamsui Campus aims to become a “City of Intellect” by taking pioneering steps to advance the frontiers of scholarship and research.

The Taipei Campus focuses on continuing education. Instruction is oriented toward practical applications, while still appreciating the important role of theory, so as to cultivate professionals with a unique educational background. The Division of Continuing Education comprises In-Service Education Center, Extension Education Center, Japanese Language Centers, Chinese Language Centers, and Professional License Training Center. In addition, its Office of Professional Studies is responsible for providing teaching and administrative assistance in professional studies programs. The mission of the Taipei Campus is to enhance the quality of society’s human resources through continuing education.
The TKU Lanyang Campus is located at Mt. Linmei, Chiao-Hsi County, Yilan. Stretching across 40 acres of picturesque mountain scenery, the campus offers spectacular views of the Pacific Ocean and Turtle Island in the distance, as well as a breathtaking sunrise panorama. The Lanyang Campus places an emphasis on university-level education. To enhance graduates’ ability to compete internationally, it adopts a “3-All Policy”: (1) Students gain global perspectives through the “Junior Abroad Program,” in which all third-year students spend a compulsory study year abroad; (2) Students gain vast exposure to English-based instruction, Lanyang Campus courses are all taught in English, so as to complement the Junior Abroad Program; (3) Through the design of the Lanyang Campus, all students experience a residential college atmosphere, replete with resident mentors. The campus goal is to provide students with a holistic education. The Campus consists of one college with four departments, around 1,000 students, and roughly 1,500 alumni.

TKU’s Cyber Campus offers a learning environment that connects the Tamsui, Taipei, and Lanyang campuses to the rest of the world through the latest information technology. It provides students the option of taking online executive master's programs offered by the TKU Department of Educational Technology, Graduate Institute of Latin American Studies, and the Department of Information and Library Science. It also cooperates with Université Jean Moulin-Lyon 3, Université de Nice (Sophia-Antipolis), Waseda University, Tokyo University of Foreign Studies, Yonsei University, Korea University, St. Petersburg University, Far Eastern Federal University, Pushkin State Russian Language Institute and other universities worldwide to provide about 1,500 synchronous and asynchronous online courses, distance learning programs, and other related courses. There are around 90,000 students partaking in such programs. By exploring the world in this virtual platform of knowledge, learners are able to readily acquire information, share practical experiences, make good use of diverse learning resources, and fulfill their dreams of a lifelong education, anytime and anywhere.
### Personnel

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founder of Tamkang University</td>
<td>Clement C. P. Chang</td>
</tr>
<tr>
<td>Chairperson, Board of Trustees</td>
<td>Flora Chia-I Chang</td>
</tr>
<tr>
<td>President</td>
<td>Huan-chao Keh</td>
</tr>
<tr>
<td>Vice President for Academic Affairs</td>
<td>Chii-dong Ho</td>
</tr>
<tr>
<td>Vice President for Administrative Affairs</td>
<td>Shi-feng Chuang</td>
</tr>
<tr>
<td>Vice President for International Affairs</td>
<td>Kao-cheng Wang</td>
</tr>
<tr>
<td>Vice President for Lanyang Campus</td>
<td>Jyh-horng Lin</td>
</tr>
<tr>
<td>Secretary-General</td>
<td>Andy Ay-hwa Liou</td>
</tr>
<tr>
<td>Director of Carrie Chang Fine Arts Center</td>
<td>Ben-hang Chang</td>
</tr>
<tr>
<td>Chief Audit Executive</td>
<td>Di-ching Pai</td>
</tr>
<tr>
<td>Dean of the College of Liberal Arts</td>
<td>Chen-jung Lin</td>
</tr>
<tr>
<td>Dean of the College of Science</td>
<td>Zi-cong Zhou</td>
</tr>
<tr>
<td>Dean of the College of Engineering</td>
<td>Hui-huang Hsu</td>
</tr>
<tr>
<td>Dean of the College of Business and Management</td>
<td>Tzong-ru Tsai</td>
</tr>
<tr>
<td>Dean of the College of Foreign Languages and Literatures</td>
<td>Wan-bau Wu</td>
</tr>
<tr>
<td>Dean of the College of International Affairs</td>
<td>Kao-cheng Wang</td>
</tr>
<tr>
<td>Dean of the College of Education</td>
<td>Hui-ling Pan</td>
</tr>
<tr>
<td>Dean of the College of Global Development</td>
<td>Cheng-hao Pao</td>
</tr>
</tbody>
</table>
Executive Director of the Division of Continuing Education  Chien-liang Chiu
Dean of Physical Education  I-cheng Chen
Director of the Office of Military Education and Training  Pai-chen Chang
Dean of Academic Affairs  Tung-wen Cheng
Dean of Student Affairs  Chun-hung Lin
Dean of General Affairs  Shiaw-shyan Luo
Dean of Research and Development  Bo-cheng Wang
Dean of Human Resources  Yi-nan Lin
Dean of Financial Affairs  Jui-chih Chen
Dean of Library  Sheue-fang Song
Chief Information Officer  Chin-hwa Kuo
Executive Director of the Center for Learning and Teaching  Dian-fu Chang
Executive Director of Alumni Services and Resources Development  Shu-chuen Yang
Dean of International Affairs  Lucia Hsiao-chuan Chen
Director & Editor-in-chief of Tamkang Times  Yu-pei Ma
Director of the Center for Environmental Protection, Safety and Health  Shiaw-shyan Luo
# Academic Calendar

Please read through the following TKU academic calendar and note down important dates and events for foreign students. The academic calendar is a vital point of reference for your future studies at TKU.

## Fall Semester, 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 1</td>
<td>Fall Semester Begins</td>
</tr>
<tr>
<td>Aug 2</td>
<td>University Teaching Faculty Evaluation Committee Meeting, 2018</td>
</tr>
<tr>
<td>Aug 7</td>
<td>Student Recruitment Committee Meeting</td>
</tr>
<tr>
<td>Aug 7 ~ 13</td>
<td>Fall semester course enrollment for undergraduates and new graduates</td>
</tr>
<tr>
<td>Aug 8 ~ 9</td>
<td>Seminar for Newly elected Chair persons of School Year 2018</td>
</tr>
<tr>
<td>Aug 13</td>
<td>Application Deadline of PhD program</td>
</tr>
<tr>
<td>Aug 14</td>
<td>In-person enrollment day for transfer students</td>
</tr>
<tr>
<td>Aug 25</td>
<td>New student PTA meeting, Dormitory Open House</td>
</tr>
<tr>
<td>Aug 28 ~ 30</td>
<td>Course enrollment for undergraduate freshmen, transfer students, and 1st year graduate students</td>
</tr>
<tr>
<td>Sep 3 ~ 4</td>
<td>Registration for students of foreign nationality, Mainland China, and Overseas Chinese</td>
</tr>
<tr>
<td>Sep 4</td>
<td>Teaching workshop for newly hired faculty</td>
</tr>
<tr>
<td>Sep 3 ~ 21</td>
<td>Information of Enrollment status available for online checking</td>
</tr>
<tr>
<td>Sep 5</td>
<td>Seminars for newly hired faculty, and overseas students orientation, 2018</td>
</tr>
<tr>
<td>Sep 6 ~ 7</td>
<td>Makeup Final Exam for Spring Semester of 2017 (including classes of Evening Programs)</td>
</tr>
<tr>
<td>Sep 6</td>
<td>Opening Ceremony for freshmen of Liberal Arts, Engineering, Foreign Languages, International Studies, all departments in Education College Medical Check-ups and campus safety lectures for all departments in Science,</td>
</tr>
</tbody>
</table>
### Fall Semester, 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep 7</td>
<td>Opening Ceremony for freshmen of Science, Business Management, all departments in Global Development College (undergrads, graduates, evening programs, transfers) Medical Check-ups and campus safety lectures for Liberal Arts, Engineering, Foreign Languages, International Studies, all departments in Education College</td>
</tr>
<tr>
<td>Sep 7</td>
<td>Deadline for enrollment and payment</td>
</tr>
<tr>
<td>Sep 10</td>
<td>Classes begin</td>
</tr>
<tr>
<td>Sep 10 ~ 26</td>
<td>Application Deadline for &quot;Certificate of Credited Programs&quot;</td>
</tr>
<tr>
<td>Sep 17 ~ 28</td>
<td>Application Period for waivers of military training and nursing courses, &quot;TKU Quality Awards&quot; and &quot;Quality Management Circle Competition&quot;</td>
</tr>
<tr>
<td>Sep 17 ~ 25</td>
<td>Drop Add week</td>
</tr>
<tr>
<td>Sep 19</td>
<td>Student Recruitment Committee Meeting</td>
</tr>
<tr>
<td>Sep 21</td>
<td>The 162nd Administrative Meeting</td>
</tr>
<tr>
<td>Sep 24</td>
<td>Day-Off for Mid-Autumn Festival (no classes)</td>
</tr>
<tr>
<td>Sep 26</td>
<td>Meeting for TKU Anniversary planning</td>
</tr>
<tr>
<td>Oct 10</td>
<td>National Day of the Republic of China (no classes)</td>
</tr>
<tr>
<td>Oct 11</td>
<td>2018 National Disaster Prevention Day – earthquake evacuation drills and practices and promotions of disaster prevention activities</td>
</tr>
<tr>
<td>Oct 13</td>
<td>Seminar for innovation in areas of teaching and administration</td>
</tr>
<tr>
<td>Oct 17</td>
<td>Curriculum Committee Meeting</td>
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<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>Oct 19</td>
<td>Student Recruitment Committee Meeting</td>
</tr>
<tr>
<td>Oct 22</td>
<td>Completion of 1/3 of the semester (students who defer or discontinue</td>
</tr>
<tr>
<td></td>
<td>study will not be able to apply 2/3 refund of their tuition payment</td>
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<tr>
<td></td>
<td>after this date)</td>
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<tr>
<td>Oct 22 ~</td>
<td>Mid-term teaching performance evaluation week</td>
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<td>Nov 4</td>
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<tr>
<td>Oct 24</td>
<td>The School Affairs Meeting</td>
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<tr>
<td>Oct 26</td>
<td>Academic Affairs Meeting</td>
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<tr>
<td>Oct 29 ~</td>
<td>Application for Graduate Degree Exam.</td>
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<tr>
<td>Nov 26</td>
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<tr>
<td>Nov 2</td>
<td>School Affairs Meeting (for Budgeting)</td>
</tr>
<tr>
<td>Nov 3</td>
<td>TKU Anniversary Celebration, Alumni Homecoming Day (Lanyang campus)</td>
</tr>
<tr>
<td>Nov 8</td>
<td>TKU 68th Founding Anniversary</td>
</tr>
<tr>
<td>Nov 9</td>
<td>Yearly Teaching Faculty Evaluation Committee Meeting, 2018</td>
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<tr>
<td>Nov 12 ~</td>
<td>Mid-Term Exams week</td>
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<td>Nov 18</td>
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<tr>
<td>Nov 12 ~</td>
<td>Roster Submission period for the students who have elected credited</td>
</tr>
<tr>
<td>Dec 7</td>
<td>curriculum</td>
</tr>
<tr>
<td>Nov 30</td>
<td>The 163rd Administrative Meeting</td>
</tr>
<tr>
<td>Dec 3</td>
<td>Completion of 2/3 of the semester (students who defer or discontinue</td>
</tr>
<tr>
<td></td>
<td>study will not be able to apply 1/3 refund of their tuition payment</td>
</tr>
<tr>
<td></td>
<td>after this date)</td>
</tr>
<tr>
<td>Dec 3 ~</td>
<td>Mid-semester Drop</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Dec 6 ~</td>
<td>The 2nd Period of Evaluation on School Affairs by MOE</td>
</tr>
<tr>
<td>Dec 3 ~ Jan</td>
<td>Examinations for Graduate Degrees</td>
</tr>
<tr>
<td>13, 2019</td>
<td></td>
</tr>
<tr>
<td>Dec 12</td>
<td>Recruitment Committee meeting</td>
</tr>
</tbody>
</table>
### Fall Semester, 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Dec 12</td>
<td>The Assignment of Newly Hired Teaching Faculty Meeting</td>
</tr>
<tr>
<td>Dec 17 ~ 30</td>
<td>The Week of Teaching Evaluation</td>
</tr>
<tr>
<td>Dec 28</td>
<td>The 164th Administrative Meeting (Chairpersons of all departments and student reps are to participate)</td>
</tr>
<tr>
<td>Dec 31</td>
<td>Day-Off (No Class)( make-up work-day on 12/22 or decided by the teacher)</td>
</tr>
<tr>
<td>Jan 1, 2019</td>
<td>National Day of the Republic of China (no classes)</td>
</tr>
<tr>
<td>Jan 2</td>
<td>Application Deadline for deferral of study</td>
</tr>
<tr>
<td>Jan 7 ~ 13</td>
<td>Final Exam Week</td>
</tr>
<tr>
<td>Jan 7 ~ 31</td>
<td>Final grades available for online checking</td>
</tr>
<tr>
<td>Jan 14 ~ 22</td>
<td>Preliminary Courses Enrollment for Spring Semester</td>
</tr>
<tr>
<td>Jan 15</td>
<td>Year-End Performance Review of the Military Training Office [Moved to 22nd when conflicting with the Meeting of National Principals of Colleges]</td>
</tr>
<tr>
<td>Jan 18</td>
<td>General Affairs Performance Evaluation Meeting</td>
</tr>
<tr>
<td>Jan 23</td>
<td>Recruitment Committee meeting</td>
</tr>
<tr>
<td>Jan 31</td>
<td>End of Fall Semester</td>
</tr>
</tbody>
</table>

### Spring Semester, 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 1</td>
<td>The Beginning of Spring Semester</td>
</tr>
<tr>
<td>Feb 1 ~ 14</td>
<td>Chinese New Year Holidays (From 2/02 to 2/10; 2/04--New Year's Eve)</td>
</tr>
<tr>
<td>Feb 15</td>
<td>Faculty and staff begin with office hours; Deadline of Enrollment and Payment</td>
</tr>
<tr>
<td>Feb 18</td>
<td>Classes begin</td>
</tr>
</tbody>
</table>
**Spring Semester, 2019**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 18 ~ Mar 1</td>
<td>Enrollment status available for online checking</td>
</tr>
<tr>
<td>Feb 23 ~ 24</td>
<td>Makeup Exam for Fall Semester (including Students of Evening Programs)</td>
</tr>
<tr>
<td>Feb 25 ~ Mar 5</td>
<td>Drop and Add Period</td>
</tr>
<tr>
<td>Feb 25 ~ Mar 1</td>
<td>Application Period to waive &quot;National Defense Military Training / Nursing Courses&quot;</td>
</tr>
<tr>
<td>Feb 28</td>
<td>Peace Memorial Day (no classes)</td>
</tr>
<tr>
<td>Mar 1</td>
<td>Day-Off (make-up class schedule decided by the teacher, make-up work-day complying with National Policy)</td>
</tr>
<tr>
<td>Mar 7 ~ 13</td>
<td>Application Period for transfer of academic major 2018</td>
</tr>
<tr>
<td>Mar 8 ~ 15</td>
<td>Application Period for Teacher Education Program</td>
</tr>
<tr>
<td>Mar 15</td>
<td>165th Administrative Meeting</td>
</tr>
<tr>
<td>Mar 18 ~ 31</td>
<td>Mid-term teaching performance evaluation survey period</td>
</tr>
<tr>
<td>Mar 18 ~ Apr 26</td>
<td>Application Period for the Graduate Degrees Examinations</td>
</tr>
<tr>
<td>Mar 22</td>
<td>Total Quality Management Seminar</td>
</tr>
<tr>
<td>Mar 23</td>
<td>Spring Festival--Departments and graduate schools are to invite alumni for homecoming</td>
</tr>
<tr>
<td>Mar 27</td>
<td>Students Recruitment Committee Meeting</td>
</tr>
<tr>
<td>Apr 1</td>
<td>Completion of 1/3 of the semester (students who defer or discontinue studies after this date will not be able to get 2/3 of initial tuition payment as refund)</td>
</tr>
<tr>
<td>Apr 1 ~ 3</td>
<td>Teaching Observation Period</td>
</tr>
<tr>
<td>Apr 4</td>
<td>Children's Day (no classes)</td>
</tr>
<tr>
<td>Apr 5</td>
<td>Tomb Sweeping Day (no classes)</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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</tr>
<tr>
<td>Apr 8</td>
<td>Deadline for 2/3 refund of initial tuition payment (for students who defer or discontinue studies)</td>
</tr>
<tr>
<td>Apr 17</td>
<td>Student Affairs Meeting</td>
</tr>
<tr>
<td>Apr 19</td>
<td>166th Administrative Meeting (Chair Persons of all departments and student representatives are to participate)</td>
</tr>
<tr>
<td>Apr 22 ~ 28</td>
<td>Mid-Term Examinations</td>
</tr>
<tr>
<td>Apr 22 ~ May 17</td>
<td>Roster Submission for the students who have elected credited curriculum</td>
</tr>
<tr>
<td>May 1</td>
<td>Students Recruitment Committee Meeting, Earthquake evacuation drills and disaster prevention activities for College of Education building on Damsui Campus</td>
</tr>
<tr>
<td>May 1 ~ Jul 7</td>
<td>Examinations for Graduate Degrees</td>
</tr>
<tr>
<td>May 3</td>
<td>Preparatory Meeting for Graduation Commencement Ceremony</td>
</tr>
<tr>
<td>May 6 ~ 10</td>
<td>Group Application of Graduating Seniors Period for Military Service Waiver</td>
</tr>
<tr>
<td>May 8</td>
<td>Teaching Faculty Evaluation Committee Meeting, 2019</td>
</tr>
<tr>
<td>May 8 ~ 21</td>
<td>Application period of double major / minor curriculum, 2019</td>
</tr>
<tr>
<td>May 9</td>
<td>Earthquake evacuation drills and disaster prevention activities for College of Education building on Damsui Campus</td>
</tr>
<tr>
<td>May 10</td>
<td>Curriculum Committee Meeting</td>
</tr>
<tr>
<td>May 13</td>
<td>Completion of 2/3 of the semester (students who defer or discontinue studies after this date will not be able to get 1/3 of initial tuition payment as refund)</td>
</tr>
<tr>
<td>May 13 ~ 17</td>
<td>Mid-Term Course-Drop period</td>
</tr>
<tr>
<td>May 17</td>
<td>Interview and Selection of Candidates for Teacher Education Program</td>
</tr>
</tbody>
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### Spring Semester, 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>May 17</td>
<td>Academic Affairs Meeting</td>
</tr>
<tr>
<td>May 20</td>
<td>Graduating Seniors' Application Deadline for Deferring Study (include students with extended study)</td>
</tr>
<tr>
<td>May 20 ~ 26</td>
<td>Teaching performance evaluation (subjects offered to graduating students)</td>
</tr>
<tr>
<td>May 22</td>
<td>Teaching faculty Evaluation Committee Meeting, 2019</td>
</tr>
<tr>
<td>May 24</td>
<td>167th Administration Meeting (for budgeting)</td>
</tr>
<tr>
<td>May 27 ~ Jun 2</td>
<td>Examinations for graduating seniors, fourth-year college and fifth-year architecture</td>
</tr>
<tr>
<td>May 27 ~ Jun 9</td>
<td>Teaching performance evaluation (subjects offered to non-graduating students)</td>
</tr>
<tr>
<td>May 27 ~ Jun 14</td>
<td>Semester Final Grades of Graduating Seniors are available for online checking</td>
</tr>
<tr>
<td>May 31</td>
<td>General Affairs Meeting</td>
</tr>
<tr>
<td>Jun 1</td>
<td>Graduation Ceremony at Lanyang Campus</td>
</tr>
<tr>
<td>Jun 3 ~ 28</td>
<td>Application Period for Credited Curriculum Certificates</td>
</tr>
<tr>
<td>Jun 5</td>
<td>Students Recruitment Committee Meeting</td>
</tr>
<tr>
<td>Jun 7</td>
<td>Dragon Boat Festival (No Class)</td>
</tr>
<tr>
<td>Jun 10</td>
<td>Application Deadline for deferring or discontinuing study of non-graduating students</td>
</tr>
<tr>
<td>Jun 14</td>
<td>Make-up Exams for Graduating Seniors including Evening Programs</td>
</tr>
<tr>
<td>Jun 14</td>
<td>81st School Affairs Meeting (for budgeting)</td>
</tr>
<tr>
<td>Jun 15</td>
<td>Graduation Commencement</td>
</tr>
<tr>
<td>Jun 17 ~ 23</td>
<td>Final Examinations</td>
</tr>
</tbody>
</table>
### Spring Semester, 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun 17 ~ Jul 15</td>
<td>Final Grades of Spring Semester are available for online checking</td>
</tr>
<tr>
<td>Jul 1 – Aug 31</td>
<td>No office hours from 7/08 ~ 7/11; No office hours on all Fridays in this period</td>
</tr>
<tr>
<td>Jul 1 – Jul 5</td>
<td>On-Board-Together Program -- 2018 Seminar for leaders of all student clubs</td>
</tr>
<tr>
<td>Jul 31</td>
<td>Spring Semester ends</td>
</tr>
</tbody>
</table>
TAMKANG UNIVERSITY
HISTORY AND DEVELOPMENT

Established as a junior college of English in 1950, Tamkang University was the first private institution of higher education in Taiwan. In 1958, Tamkang Junior English College was renamed as the Tamkang College of Arts and Sciences. In 1980 it became known as Tamkang University.

The university was inaugurated in 1950, on a campus located at Chen Li Street, Tamsui. At the time, the college offered non-degree undergraduate programs in courses relevant to English language and literature. Shortly thereafter, courses related to Chinese literature, mathematics, business administration, and chemistry also became available.

However, the campus on Chen Li Street soon became too small for Tamkang’s purposes, and planning for a new and larger campus in a different part of Tamsui began. This new campus was completed in 1955 and consisted of six traditional Chinese classrooms and a library. Since then, new buildings have been built almost every year to accommodate the ever-increasing number of students. These new buildings include the TKU Maritime Museum, the leading edge Chueh-Sheng Memorial Library, the Carrie Chang Fine Arts Center, the Chueh-Hsuan Classical Chinese Gardens, the Shao-Mo Memorial Natatorium Complex, the College of Foreign Languages and Literatures, the Shao-Mo Memorial Gymnasium, the Shao-Mo Memorial Activity Center, and Hsu Shou-Chien International Conference Center.

While the new campus was still in its blueprint stage, the TKU Board of Trustees established a separate campus on Po Ai Road, downtown Taipei (1951), where English extension programs for adults, as well as regular credit courses, were offered. Subsequently, in 1965, the buildings on the Taipei Campus were donated to the government. A few years later, a new city campus was built on Kinghua Street. The new Taipei Campus consisted of two buildings, which from 1962 to 1989 served as business and management colleges during the day and continuing education centers at night.

In 1956, after Tamkang gained the right to issue bachelor’s degrees, it discarded its system of non-degree programs. Up to that time, there were only five departments: English, Chinese, Mathematics, Chemistry, and Business Administration. By 1960, a five-year program for junior high school graduates was added. This program, together with other new courses in water and soil conservation heralded Tamkang’s entrance into the field of engineering studies—an area in which the university has since excelled.

With the rapid increase in the number and size of its departments, Tamkang College’s administrative and teaching work grew to unprecedented levels. In 1966, in order to manage the college more effectively, the board of trustees divided the school into four colleges: the colleges of Liberal Arts, Science, Engineering, and Business Administration. There was also an evening program, which soon evolved into an independent college. In 1968, the College of Business Administration became the College of Business, and later, the College of Management was established. As Tamkang’s library and teaching resources expanded, it instituted an MA program in Western Languages and Literature (1969), an MS program in Mathematics (1970), and a Ph.D. program in Chemistry (1975).

Educational Psychology and Counseling, Futures Studies, Curriculum and Instruction, Taiwan and Asia-Pacific Studies, College of International Affairs (English-Taught Program).

As for undergraduate programs, Tamkang has developed from a junior college offering only English into a comprehensive university with 8 colleges: the Colleges of Liberal Arts, Science, Engineering, Business and Management, Foreign Languages and Literatures, International Affairs, Education and Global Development. Tamkang University’s 8 colleges are made up of 51 departments and divisions, 48 master’s programs, and 19 doctoral programs.

After more than 68 years of development, Tamkang now has a student enrollment of over 25,000, more than 2,200 faculty and staff, and four campuses: the Tamsui Campus, the Taipei Campus, the Lanyang Campus, and the Cyber Campus. In addition to educating undergraduate and graduate students, Tamkang University hosts a number of international conferences, facilitates cultural interaction, offers technological services to the northern Taiwan community, provides professional skills and language training courses for adults, and carries out academic cooperation and exchange programs with over 190 institutions of higher education in Northeast Asia, the Americas, Russia, Europe, and Australia. In recent years, through frequent visits, seminars, and conferences with a number of prestigious national universities in Mainland China, Tamkang University has also played a significant role in promoting academic Cross-Strait relations.

From 1950 to 1964, four scholar-educators served as President of Tamkang College. They include Chang Ching-sheng (1950-1951), Chang En-chu Chu (1951-1953), Chu Hao-jan (1953-1956), and Chen Wei-lun (1957-1964). From 1964 to the present, five scholar-educators served first as President of Tamkang College and later as President of Tamkang University. They are Dr. Clement C.P. Chang (1964-1986), Chen Yea-hong (1986-1989), Louis R. Chow (1989-1992), Yun-shan Lin (1992-1998), Horng-jinh Chang (1998-2004), Flora Chia-I Chang (2004-2018), and the current President Huan-chao Keh, who assumed his presidency on August 1, 2018. Of these scholar-educators, Dr. Clement C.P. Chang—the former president and founder of Tamkang University—deserves special mention. Due to his foresight and global perspective, Dr. Chang has played a significant role in shaping many current trends in Taiwanese education.

Tamkang University’s undergraduate program provides the ideal environment for students hoping to pursue the career of their choice. They may aspire to become writers or scholars, engineers, scientists, economists, or specialists in the fields of humanities, science, technology, business, and other fields of human knowledge. To achieve this goal, students are required to undertake both classroom learning and independent research. In the classroom, students apply the latest learning techniques; while in the research labs, students invariably draw on both theory and practice.

TKU believes that physical growth and education is just as important as academic or moral education. For this reason, it requires students to take courses in physical education, military training, national history, and recreational and extracurricular activities. Through such courses, TKU hopes to instill in students a sense of responsibility and to produce students who go on to make substantial contributions to the community and the nation.

TKU graduate programs prepare graduate students for life-long careers as scholars or experts in their chosen field. Such programs encourage independent study and the exchange of ideas and research findings between professors and students. TKU believes that independent research helps to develop students’ academic abilities and results in great advances in specialized human knowledge.

TKU’s graduate institutes provide financial assistance to students and faculty involved in carrying out research. They encourage researchers to formulate policy for local, industrial or commercial corporations, or for the government. The graduate institutes also support the publication of research findings and sponsor national and international conferences to promote cultural and academic exchange. The university’s main objectives are to embrace globalization, and promote information and future-oriented education. At its present stage of development, Tamkang aims to strengthen its competitiveness, develop a distinctive TKU culture and, above all, maintain its leading position as the foremost private university in Taiwan.
TAMKANG’S TRIPLE OBJECTIVE OF GLOBALIZATION, INFORMATION-ORIENTED EDUCATION, AND FUTURE-ORIENTED EDUCATION

Tamkang University’s “Triple Objectives of Education” include globalization, information-oriented education, and future-oriented education. These objectives were formulated by the Founder of TKU, Dr. Clement C. P. Chang. Through these “triple objectives,” TKU hopes to equip students with a global perspective; to train students to seek the most current information, to create the future and, to put it in Dr. Chang’s words, “achieve research excellence, instructional improvement, and enhancement of social welfare.”

Globalization

Since the founding of Tamkang University, we have attached great importance to internationalization. So far, our efforts have achieved very substantive results. TKU values the fostering of students’ world views and the building of students’ proficiency in foreign languages. At present TKU maintains academic cooperation agreements with more than 200 well-known institutions of higher education worldwide and in China mainland. This cooperation encompasses faculty and student exchanges, joint research projects, dual-degree programs, and mutually beneficial educational ventures. TKU sponsors the Tamkang University Chair Lecture Series, invites outstanding overseas professors to teach intensive courses, and subsidizes teachers to go abroad to participate in international and cross-straits symposia, and to teach courses or to give lectures.

TKU provides a high-quality and globally-oriented learning environment. It remains committed to transforming its campuses into a more fully integrated global village. TKU has established twelve degree-programs that are taught entirely in English and one degree-program that is taught in Spanish. English-taught courses total more than 800. The Lanyang Campus offers a thoroughly English-rich environment, having all courses exclusively taught in English, thus making it unique among higher educational institutions throughout Taiwan. In 2018 the number of foreign students at TKU reached 2054 representing as many as 75 countries. Our university is, indeed, profuse in language and cultural resources. In 2014, we took part in the Assessment Project for Internationalization which was held by the ROC Ministry of Education, and proved to be one of the top two performing universities.

In 1993 TKU was the first university in Taiwan to launch a Junior Year Abroad program. To date the number of students going abroad to study during their junior year has already exceeded 7,677; in the current academic year (2018) 648 students are studying at 111 universities in 19 countries. They will study a full year overseas. In addition to this, great efforts have been made to increase the diversity of the students’ globally mobile learning experience; these programs include short-term off-site study, overseas training, international volunteer service, and international internships. Each year more than 1300 students take part in overseas studies.

Information-Oriented Education

Tamkang University has long been a pioneer in information processing. Since the establishment of the Office of Information Services in 1968, Tamkang has applied computer technologies to administration, teaching, research, and services. Its vision is to create the most attractive information-oriented campus available. To do so, it has adopted the following information based goals: (1) to maintain a secure, reliable, and fast information environment; (2) to integrate information power and its applications on campus; (3) to continuously innovate and apply such innovations to campus operation; (4) to have applications available campus wide; (5) and to serve the university indefinitely.

Tamkang University is the first academic institution in the world to receive the ISO 20000 certificate, the international standard for an IT Service Management System. And it is also the first academic/research institution in Taiwan to receive the ISO 27001 certificate, the international standard for an Information Security Management System (ISMS).

In recent years, Tamkang has set up an economical off-campus dorm network, a fast and convenient campus network, a multi-layer security network, and an innovative Digitalized Campus Teaching
Support Platform, as well as actively developing easy and convenient mobile services. Together, these features make TKU’s campuses the most attractive e-Campuses available.

Tamkang is currently working in collaboration with mobile telecommunication businesses to set up an all-new borderless and wireless university. According to the 2018 Webometrics evaluation, TKU is ranked 633rd among 27,000 universities and research institutes worldwide, 124th in Asia, 10th in Taiwan and 1st among private Taiwanese universities.

**Future-Oriented Education**

The third of Tamkang University’s major objectives is future-oriented education. Future-oriented education at Tamkang University dates back to 1968, when Dr. Clement C. P. Chang published the article “The Future Trends of World Civilization,” which emphasized the importance of “futures studies.” In doing so, he introduced futures studies to Taiwan. He further enhanced the public’s awareness of future studies by publishing Mandarin translations on the titles, such as Knowledge Explosion, Catch the Future, The Limit to Growth, and The Birth of the World of Tomorrow. Subsequently, a monthly report on futures studies was inaugurated by Tamkang University on January 10, 1975. Dr. Chang’s Education in the Twenty-First Century, published in 1978, laid a solid foundation for Tamkang’s educational philosophy, which emphasizes a “global perspective and future-oriented education.” Most important of all, in 1980, Tamkang enhanced its status, transforming from a “college” to a “university.” At the time, Dr. Chang wrote the article “Looking Forward Thirty Years in the Future: 1980-2010,” which identified the academic role Tamkang should play and provided a guideline for future development. Under this direction, Tamkang’s objective for future-oriented education was “to recognize the future, adjust to the future, and create the future,” so as to enable students to recognize the changing world, confront it, and, moreover, to create their own future.

To realize this objective, Tamkang has set the following goals: (1) to strictly carry out the design and instruction of core courses in futures studies; (2) to make general courses future-oriented; and (3) to make future-oriented innovations in instruction, research, administration and service. Accordingly, Tamkang University has for many years offered a “Futures Studies” course open to all majors. And beginning in 1993, the university sent faculty and students to attend the annual Conference of World Future Society (WFS) or World Futures Studies Federation (WFSF).

In order to fully carry out this policy, the Division of Futures Studies was inaugurated in 1995 under the Center for Educational Development. The Division offered undergraduate courses in five major areas: futures studies in society, technology, economy, environment, and politics. It also designed several graduate courses related to futures studies. In 2000, the Division was elevated to the status of ‘Center’, and became the Center for Futures Studies. The Center publishes a quarterly Journal of Futures Studies, actively orders and exchanges essays, journals, and books, coordinates scholarly dialogue through international conferences, workshops, and websites, and co-sponsors seminars with WFS, WFSF, and the Foundation for the Future (FFF). The Institute also received a four-year research grant from the Ministry of Education to integrate undergraduate futures-related courses into a futures research program during 2001 and 2005. Most importantly, in Fall 2002, the Graduate Institute of Futures Studies was established. Its goals are: (1) to equip students with the ability to perform environmental scanning, scenario building and visioning within an integrated context of social change; (2) to shape students into future leaders who possess critical and innovative thinking in the fields of education and social sciences; (3) to enhance students’ ability as policy and planning experts with knowledge of local and global issues. In 2015, the Center for Futures Intelligence and Research (C-FAR) was established, with missions to: (1) advocate futures thinking to the general public and organizations, (2) help enhancing organizations’ capacity in strategic foresight, (3) improve ways of application of futures theories to practices in business, government, education sectors, (4) provide consultancy services in strategic futures, and (5) cooperate with various sectors to create preferred futures for Taiwan and the world. Based on these visionary efforts, Tamkang University was granted “WFSF Futures Award” in 1999. Moreover, Tamkang University and President Flora Chia-I Chang received “Hawaii Research Center Award for Excellence and Innovation in Institutional Foresight” in 2016.

In addition to Tamkang University’s triple objectives of globalization, information-oriented education, and future-oriented education, TKU is currently re-engineering its “Fifth Wave” so as to realize its ultimate goal of becoming a first-class international university.
ADMINISTRATIVE OFFICES AND LIBRARY

The Board of Trustees
TKU’s highest authority, the Board of Trustees, consists of community leaders interested in the welfare of the university. Members of the Board elect the TKU president from two to three candidates chosen by representatives of university faculty, staff, and alumni. The Trustees, in addition to shaping major policy and controlling the university budget, are also responsible for overseeing and approving all university functions.

Office of the President
The president is the chief executive and chief academic officer of the university. The president has full responsibility under the Board of Trustees for long-term policy as well as day-to-day decision-making. The Office of the President is located in the Administration Building, Tamsui Campus.

Office of the Vice President for Academic Affairs
The Vice President for Academic Affairs is responsible to the president for all matters related to teaching and research. The vice president oversees the operation of Tamkang’s eight colleges, as well as the Office of Research and Development, the Division of Continuing Education, the Office of Physical Education, and the Office of Military Training.

Office of the Vice President for Administrative Affairs
The Vice President for Administrative Affairs is responsible for each aspect of Tamkang University’s administrative functions, including academic affairs, student affairs, general affairs, human resources, finance, the library, information services, alumni services and resources development, learning and teaching, and the Tamkang Times Committee. The Office of the Vice President for Administrative Affairs is located in the Business & Management Building on the Tamsui Campus.

Office of the Vice President for International Affairs
The Vice President for International Affairs supervises the operations related to international exchange and education, and is the chairperson of the Internationalization and International Exchange Committee. The Vice President for International Affairs also heads the Cross-Strait Exchange Task Group. The Vice President for International Affairs essentially guides the day-to-day performance of the Office of International and Cross-Strait Affairs. The office’s primary duty is to promote international academic cooperation for the faculty and students. This office is located in the Ching-sheng Memorial Building on the Tamsui Campus.

Office of the Vice President for Lanyang Campus
The Provost of Lanyang Campus is responsible for all academic and administrative functions at the Lanyang Campus, including academic affairs, student affairs, general affairs, financial affairs, library, information services and International & Cross-Strait Affairs. The Lanyang Campus Office is located in the Administration Building on the Lanyang campus.

Office of the Secretariat
The Secretariat is responsible for the secretarial functions and public relations of the university. The Office of the Secretariat also provides staff services to the TKU president and vice presidents. The Office of the Secretariat is located in the Administration Building on the Tamsui Campus.

Carrie Chang Fine Arts Center
The Carrie Chang Fine Arts Center was established in the year 2000. It is a two-story exhibition hall that is frequently home to both local and international art displays. The center consists of several subsidiary bodies: the Carrie Chang Music Hall, the Research Office of Chinese Calligraphy, and the TKU Maritime Museum. The Maritime Museum has a collection of more than sixty model ships from fifteen countries, ranging from 15th~17th century ships to futuristic superconductor-powered vessels.

Tamkang University founded the arts center to elevate the standard of artistic education at Tamkang, to increase artistic appreciation and interest by means of exhibitions, performances, instruction, promotion, collection, and to facilitate exchange among teachers, students, society, and the
international community, with the hope of integrating art with education; the campus with the community.

**Office of Quality Assurance and Audit**

The Office of Quality Assurance and Audit is responsible for assuring and enhancing the quality of academic and administrative excellence. The Office administers the following assessments: Institutional Accreditation, Program Accreditation, Teaching Assessment, and academic and administrative total quality management. The Office also organizes the Academic and Administrative Innovation Conference, Total Quality Management Conference, Quality Control Circle Competition, and Education Quality Management Committee. Moreover, systems and activities of internal audit are designed and implemented by the Office to ensure the effectiveness and continuous improvement of university operations.

**Center for Institutional Research**

The Center for Institutional Research is devoted to the application of Total Quality Management for continuous improvement; and offers timely, adequate, and evidence-based analysis and research as references for University self-evaluation and decision-making. It does this through the collection of institutional data from the teaching, research, student learning, as well as administrative departments. The Center is under the guidance of the Institutional Research Advisory Committee; with the President as Chairman, members are composed of heads and faculty from the education, statistics, information and related fields. The main function of the committee is to provide directions for research schemes that are in accordance with trends of higher education development, as well as to support University learning development and decision-making.

**Office of Research and Development**

The Office of Research and Development was established to help spur national development and advance the quality of research conducted by TKU faculty. The Office deals with all administrative aspects of faculty research, including research applications, signing of contracts, and budget formulation for full-time TKU faculty. It also helps promote research results and apply for intellectual property rights. As of August 2018, the Office consists of 12 research centers.

**Division of Continuing Education**

To promote national development, meet the needs of society, and enhance cooperation between academia and industry, on August 1, 2003, Tamkang University merged the Extension Education Center and the Public Service Center to create the College of Continuing Education. The new college not only provided courses for on-the-job students, but also offered bachelor and master credit courses. Then in August, 2005, the college changed its name to become the Division of Continuing Education. The Division originally composed of five centers: the In-service Education Center, the Extension Education Center, the Japanese Language Center, the Chinese Language Center, and the English Language Center. In August, 2007, a new center was added: the Professional License Center. In August, 2013, we merged the English Language Center with the Extension Education Center becoming the Extension Education Center.

**Office of Physical Education**

The Office of Physical Education is responsible for the design and teaching of physical education courses, sports competitions for teachers and students, and the management of sports facilities. Students are also encouraged to organize teams for intercollegiate competition or for intramural sports such as basketball, baseball, table tennis, tennis, soft tennis, badminton, soccer, volleyball, golf, taekwondo, fencing, billiards, judo, kendo, track & field and swimming.

**Office of Military Education and Training**

The Office of Military Training, in addition to providing regular military instruction, also renders counseling services and assistance to students in times of need and in emergencies. The office offers a two-hour noncredit military training course, which is a prerequisite for all freshmen. Elective military courses are also provided for sophomores and juniors. Military training involves lectures and drills in the basic military arts.
Office of Academic Affairs
The Office of Academic Affairs provides both students and teachers with academic support services. These include services related to student enrollment, applications for transcripts and certificates, and support with issues related to teaching and research. The Office is divided into several sub-offices or “sections,” based on administrative function. These include the registration, curriculum, and admission sections, and The Center for General Education and Core Curriculum (CGECC).

Office of Student Affairs
The Office of Student Affairs is responsible for processing students’ requests for academic leave, helping students apply for insurance, and dealing with all matters relating to student associations. It also provides student counseling services and organizes on-campus student housing. The ‘Student Office’ (as it is commonly referred to) is divided into separate sections located throughout the Tamsui Campus.

Office of General Affairs
This office is responsible for overall campus planning and management of administrative affairs. The Office of General Affairs is committed to creating sustainable campuses that do more than just satisfy the requirements for teaching, research, learning, and life guidance. Core tasks for this office include maintaining campus health and safety, ensuring energy conservation and carbon reduction, and other related services that require efficient and effective delivery.

Top priorities in the 2018-2019 academic year are to ensure the sustainable management of current resources while introducing new and innovative campus features, implementing more efficient management practices, overseeing improvements in personnel management and service provision, and enhancing the overall aesthetics of each Tamkang campus.

Office of Human Resources
The Office of Human Resources (HR) provides professional and technical support in human resources development by helping employees enhance their personal strengths and creating a work environment that allows talented personnel to grow and contribute at the highest possible level. This is achieved by providing employees with information, programs and services that support employees’ professional and personal needs both at work and at home. For example, the Office provides employees with expertise and information on recruitment, insurance, professional growth and retirement benefits.

Office of Finance
The Office of Finance is responsible for managing the university budget, monitoring financial operations and maintaining accounting records. The functions carried out by the office are able to help all departments to utilize resources efficiently and effectively, in order to enhance their performance. This, in turn, has facilitated the steady development of Tamkang University.

Chueh-sheng Memorial Library
The Chueh-sheng Memorial Library provides information resources and services that facilitate the processes of learning, teaching, and research. In addition to the main library, the university library has three branches, located respectively on the Taipei Campus, the Lanyang Campus and in the Chemistry Building on the Tamsui Campus.

At present, the university library stores more than 1.4 million printed volumes; 2.5 million electronic books; 78 thousand periodical titles (including electronic journals); 140 thousand non-book items; and 547 electronic databases. All materials are managed by the Library Integrated System named Virtua.

Office of Information Services
The Office of Information Services (OIS) provides computing and networking services to university administration, graduate and undergraduate instructors, and off-campus agencies. It is made up of the Office of Chief Information Office (CIO) as well as several sections, including the Project Development Section, the Education Support Section, the Administration Information Section, Network Management Section, and Digital Design Section.

The OIS has applied computer technologies to administration, teaching, research, and services. In order to create the most attractive information-oriented campus, the OIS maintains a secure, reliable, and fast information environment, thus integrating information power and applications on campus.
Center for Learning and Teaching

The Center for Learning and Teaching (CLT) was established in August 2006 to improve the quality of teaching offered by TKU and to enhance learning outcomes. The Center consists of three ‘sections’: the Teacher Professional Development Section, the Student Learning Support Section, and the Distance Education Development Section. The CLT aims to provide a high quality learning and teaching environment for all students and faculty at Tamkang by incorporating research planning, curriculum design, consultation, enhanced digital learning, and distance education.

To establish learner-centered teaching perspectives and to guide students towards taking the initiative in learning, we organize teaching workshops and seminars, encourage mutual communication among teachers, promote classroom observations, build up professional learning communities, develop e-learning courseware, and create innovative learning environments. In addition, we assist students to re-identify their own learning styles, to acquire suitable learning strategies, to remove difficulties and obstacles to studying, and to know how to search for learning resources, thus providing comprehensive adaptability, mentoring from admission to graduation, and cultivating students’ independence and love and diligence for studying.

Office of Alumni Services and Resources Development

The Office of Alumni Services and Resources Development was established in 1995 to meet the demands of a rapidly changing society, to promote closer relations with alumni, and to raise funds and advance TKU’s academic standards. The Office, which was known as the “Office of University Development” until August 2001, is comprised of the Alumni Liaison Section and the Fund Raising Section. For organizational restructuring, unit mergers are not grouped from August 2018.

As of July 2018, the total number of Tamkang alumni has reached 260,000. Tamkang graduates have successfully organized up to 147 alumni associations based on departments and graduate institutes, regions, businesses, and other venues.

Office of International and Cross-Strait Affairs

The Office of International and Cross-Strait Affairs is responsible for all aspects of exchange and interaction between students, faculty and staff from TKU and its overseas partner institutions. The Office consists of two subsidiary bodies: the International and Cross-Strait Exchange Section and the International and Mainland Student Guidance Section. The former deals with matters related to exchange between TKU and its sister universities; while the latter provides living expenses and study assistance to international, overseas Chinese, and Mainland Chinese students.

The Committee of Globalization and International Exchange is chaired by the Vice President for International Affairs. It supervises the Office of International and Cross-Strait Affairs and oversees various facets of international interaction between TKU and its partner universities abroad.

Tamkang Times Committee

The university publishes a four-page weekly newspaper known as the Tamkang Times. The ‘Times’ provides faculty, students, and alumni with news concerning the current development of the university and student activities, and promotes relations between the university and its faculty and students. The Tamkang Times Committee is chaired by the Vice President for Administrative Affairs.

Tamkang University Press

In order to encourage academic research, improve teaching quality, and publish greater numbers of academic/professional books and periodicals, the Tamkang University Press (TKUP) was established in August 2002. It is supervised by the Office of Research and Development. The TKUP offers assistance and services related to TKU publications, including the consultation on publication strategy and application of ISBN for faculty and staff, and the process of licensing, printing, distribution and marketing, etc.
STUDENT LIFE

All new students are required to attend orientation programs before their coursework begins in order to better understand the history, organization, personnel, facilities, and policies of the university. The orientation involves a daylong series of talks by senior administrative personnel and faculty members.

The university has adopted a tutorial system in which a full-time teacher is invited by the Office of Student Affairs to serve as an advisor to groups of students. He or she helps them in matters of personal, moral, and academic development as well as other aspects of daily life. In order to gain a better understanding of the students, each advisor organizes a schedule to meet with students on a regular basis and then reports to the Office of Student Affairs at the end of each semester.

The Student Health Clinic of Tamkang University is located in Tamsui Campus. It provides students with convenient and high quality medical services. It is open from Monday to Friday, 8:00-17:00 and 18:00-21:00. Medical care is provided free of charge for TKU students, staff and faculty members.

Accommodation

The Sung-tao Hall is TKU’s female student dormitory. There are 4 people per room, and rooms are furnished with single beds (excluding mattresses), desks and chairs, bookshelves, desk lamps, wardrobes, bedroom telephones and internet connections. Shared facilities include public telephones, social lounges, reading rooms, simple cooking equipment, drinking water facilities and refrigerators. On the floor below the dormitory there are restaurants, convenience stores, beauty salons and other commercial services for students.

The Tamkang Hall Dormitory is located about 10 minutes (on foot) from the Tamsui Campus and is a 14-floor building (it houses female and male students separated by floors). Near the dormitory there are many restaurants, as well as banks, a post office, convenience stores, supermarkets and community libraries.

The dormitories have a capacity of 2,285 female students and 658 male students respectively. Please check our website for information relating to housing. Sung-tao Hall hires residential counselors who are organized in shifts to ensure the security of female students in the dormitory. Tamkang Hall offers 24-hour protection with security personnel at the lobby.

Extracurricular Activities

The university regards extracurricular activities as an integral part of the total educational experience. Students are therefore encouraged to participate in the widely diversified clubs and associations organized on campus.

To provide a venue for extracurricular activities, the university set up a Student Activity Center on the Tamsui Campus in 1964. This center is home to most student activities and provides office space for each officially registered student association.

There are more than two hundred student associations and clubs at Tamkang University. These student associations and clubs can be classified into nine main categories: academic and literary groups, athletic clubs, recreational clubs, voluntary clubs, alumni associations, departmental associations, religious associations, musical clubs, and autonomous organizations. Popular activities include speech contests, intramural and intercollegiate sports, field trips, lectures, movies, musical performances, drama performances, festival exhibitions, picnics and alumni events.

In 2011, extracurricular activities became a compulsory component of the curriculum. Through informative classes and practical activities held by clubs and societies, students learn important life skills, such as the value of teamwork and the spirit of sacrifice and responsibility. They will also receive training in a number of areas, with the aim of refining students’ ability to plan, organize, communicate, coordinate, make decisions, assess options, and solve problems.
ADMISSION AND FINANCIAL AID

Requirements for admission to Tamkang University vary based on the nature of the program for which one wishes to apply. The university only admits applicants who provide sufficient evidence of their educational background, academic abilities, possible work experience, and interests.

Undergraduate Admissions

Local and Overseas Chinese Students

Before being admitted to study at TKU, local students undergo a screening process that involves a review of applicants’ credentials and examination results. Applicants hoping to study at TKU should fulfill one of the following criteria: (a) a high school graduate or equivalent; (b) a 3 or 5-year junior college graduate.

Foreign nationals of Chinese descent may apply for admission with the University Entrance Committee for Overseas Chinese Students or consult the Taiwan Representative Office in their country of residence. They may also apply for direct admission to TKU through the Admissions Section, Office of Academic Affairs.

International and Mainland Chinese Students

International students may apply for direct admission to TKU through the Admissions Section, Office of Academic Affairs. Applicants must hold at least a senior high school diploma and have basic Chinese language skills. Application guidelines and important dates are available on the university website. Mainland Chinese students may apply for admission with the University Entrance Committee for Mainland Chinese Students.

Transfer Students

Each year, Tamkang accepts a fixed number of transfer students into its undergraduate program. Local students and overseas Chinese students who have completed at least one year of study at another recognized college or university, or who have graduated from a three or five-year vocational college, are eligible to apply for transfer into programs related to their previous training. Admission is highly selective and based on scores earned in the transfer examination held each July at TKU.

International students may apply directly with the Admission or Registration Section of the Office of Academic Affairs for transfer into a department related to their previous specialization. After their first semester, all TKU freshmen may apply to transfer to another department. However, admission is very competitive; only those who pass the transfer exam with high scores will be admitted.

Graduate Admissions

Tamkang graduate programs offer both doctoral degrees and master’s degrees in various fields. Tamkang currently offers nineteen Ph.D. degrees in Chinese, English, Chemistry, Physics, Management Sciences, International Affairs and Strategic Studies, Computer Science and Information Engineering, Water Resources and Environmental Engineering, Mathematics, Civil Engineering, Electrical and Computer Engineering, Banking and Finance, Industrial Economics, Mechanical and Electro-Mechanical Engineering, Chemical and Materials Engineering, and European Studies, Doctoral Program in Robotics, Finance Industry and Business Management, Educational Leadership and Technology Management. Master’s programs are available in over forty fields, including liberal arts, science, engineering, business, management, foreign languages and literatures, and international studies.

Local and Overseas Chinese Students

Local students who apply for admission to graduate programs (both Master and PhD) should sit for written and oral examinations. Only those who pass the examinations with high scores are admitted. The written examination usually includes English, Chinese, and other subjects related to each program.

Overseas Chinese students who graduated from a Taiwanese university can choose either to take the entrance exams with other local Taiwanese students or apply for admission with the University Entrance Committee for Overseas Chinese Students.
Master’s Programs
Applicants must be graduates from an accredited university in a field related to the graduate program concerned or must have completed coursework demonstrating knowledge equivalent to a bachelor’s degree in a related field.
Applicants who are graduates from three-year junior colleges should have self-studied or have been employed in a position related to their respective studies for at least two years.
Applicants who are graduates from two-year or five-year junior colleges must have self-studied or been employed in a position related to their specific studies for at least three years.

Ph.D. Programs
Applicants must hold a master’s degree in related fields.
Applicants must submit a master’s thesis and other related publications.
M.A. candidates may directly proceed to the doctoral programs should they meet the following conditions: (a) They have completed one year or two years of coursework with excellent standing and their academic records must be rated in the top 30% of their respective classes. (b) They must be approved by the departmental/graduate institute committee and, ultimately, by the university president.
Bachelor’s degree holders who are graduates from departments requiring six years to graduate can apply if they have received training in their specialized fields for over two years and can submit a thesis equivalent to a master’s thesis.

International and Mainland Chinese Students
International students who intend to pursue graduate studies leading to a master’s degree or a doctoral degree must hold a bachelor’s degree or a master’s degree respectively. Applicants must file an application directly through the Admissions Section of the Office of Academic Affairs. Mainland Chinese students must apply for admission with the University Entrance Committee for Mainland Chinese Students.

Exchange Students
Students from Tamkang’s sister universities who wish to study at Tamkang University as exchange students should apply directly to the International Office at their respective universities.

Scholarships and Financial Aid
Over 200 scholarships and financial subsidies contributed by public and private organizations, corporations, academic institutions, associations, and individuals are offered to TKU students each year. These scholarships differ in nature. Some are offered to students in specific academic fields or from certain areas around Taiwan. Others are set up specifically for foreign or overseas Chinese students. In general, scholarships and other financial aids are offered only to underprivileged students with consistently outstanding grades and good behavior. Application forms may be obtained from the Office of Student Affairs.
Student internships are occasionally offered in the form of part-time jobs to help underprivileged students with their tuition and living expenses. The jobs, which vary in their nature and requirements, are offered on a competitive basis or via examination. Applications should be made to the Office of Student Affairs.
A student loan system has been established to help students pay for university tuition, books, dormitory fees and living expenses. It may differ from other types of loans in that the interest rate may be substantially lower and the repayment schedule may be deferred while the student is still studying. For more information about student loans, please direct your enquiries to the Office of Student Affairs.
TUITION AND FEES FOR THE 2018-2019 ACADEMIC YEAR

Tuition and academic fees for each academic year are stipulated by the Ministry of Education of the Republic of China. The following fees for the international and Mainland Chinese students are subject to change accordingly.

### Undergraduate Student Tuition Fees

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Tuition per semester (NT$ per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Affairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Languages and Literatures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>39,000</td>
<td>17,260</td>
</tr>
<tr>
<td>Engineering</td>
<td>40,800</td>
<td>24,310</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>39,000</td>
<td>18,110</td>
</tr>
<tr>
<td>Global Development</td>
<td>40,800</td>
<td>30,340</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Departments</th>
<th>Tuition per semester (NT$ per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Communication</td>
<td>40,800</td>
<td>24,860</td>
</tr>
<tr>
<td>Information and Communication</td>
<td>40,800</td>
<td>24,860</td>
</tr>
<tr>
<td>Information Management</td>
<td>40,800</td>
<td>24,860</td>
</tr>
<tr>
<td>International Tourism Management (English-Taught Program)</td>
<td>39,000</td>
<td>22,870</td>
</tr>
<tr>
<td>Global Politics and Economics (English-Taught Program)</td>
<td>39,000</td>
<td>21,940</td>
</tr>
<tr>
<td>English Language and Culture (English-Taught Program)</td>
<td>39,000</td>
<td>21,940</td>
</tr>
</tbody>
</table>

### Graduate Student Tuition Fees

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Tuition per semester (NT$ per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Affairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Languages and Literatures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>39,975</td>
<td>17,685</td>
</tr>
<tr>
<td>Engineering</td>
<td>41,820</td>
<td>24,925</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>39,975</td>
<td>18,560</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Departments</th>
<th>Tuition per semester (NT$ per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Communication</td>
<td>41,820</td>
<td>25,490</td>
</tr>
<tr>
<td>Information and Communication</td>
<td>41,820</td>
<td>25,490</td>
</tr>
<tr>
<td>Information Management</td>
<td>41,820</td>
<td>25,490</td>
</tr>
</tbody>
</table>
Items | Other Fees (NT$ per semester) (Uniformed rate throughout the University)
---|---
Physical Education | 2,700
Military Training | 2,700
Computer Laboratory | 930
Language Laboratory - language majors | 850
Language Laboratory - non-language majors | 640
Student Life Insurance (per semester) | 185
E-Learning Computer Laboratory fee (per semester) | 1,540

**In-Service Student Tuition and Fees**

**Master’s Program**

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Credit Fees (NT$ per credit per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
<th>Thesis Advisement Honorarium (NT$ pay once in the first semester of the second year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts Education</td>
<td>5,900</td>
<td>20,380</td>
<td>6,000</td>
</tr>
<tr>
<td>International Affairs</td>
<td>6,525</td>
<td>21,130</td>
<td>6,000</td>
</tr>
<tr>
<td>Foreign Languages and Literatures</td>
<td>8,260</td>
<td>23,210</td>
<td>6,000</td>
</tr>
</tbody>
</table>

**Two-year Bachelor’s Program**

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Credit Fees (NT$ per credit per semester)</th>
<th>Miscellaneous Fees (NT$ per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Languages and Literatures</td>
<td>1,765</td>
<td>13,150</td>
</tr>
</tbody>
</table>

**Others**

**Teacher Education Program**

1. Regular students:
$1,350 per credit subject to the fees set for students in the College of Liberal Arts.

2. Delay of Graduation:
   A. Those who take more than 9 credits in a semester have to pay full tuition as required by their specific departments or graduate institutes (including those in the Teacher Education Program).

   B. Since the 2014-2015 academic year, enrolled graduate students, who take less than 10 credits in a semester, have to pay extra miscellaneous fees NT$4500.
UNIVERSITY ACADEMIC REGULATIONS

Grading System

Tamkang University uses a numerical grading system. The scores and their alphabetical equivalents are as follows: 80-100 (A; GPA: 4), 70-79 (B; GPA: 3), 65-69 (C; GPA: 2), 60-64 (D; GPA: 1), 59-0 (F; GPA: 0). The passing grade is 60 for undergraduate students and 70 for graduate students.

Guidelines for Grading

1. After being submitted to the Office of Academic Affairs by the course instructor, students’ grades may no longer be changed.
2. If students have doubts surrounding their semester grade, they must submit a written letter to the Office of Academic Affairs within three weeks after the grades have been posted on the internet for viewing. If a correction to the submitted grades is required, the course instructor must provide a written explanation accounting for the error, and attach the original copy of the official score book as well as any other related documents or information. The submission will be reviewed by the Office of Academic Affairs in accordance with related regulations.

Guidelines for Credit Offering

1. One credit point is awarded for each hour of class time taken per week. For example, if the class is two hours per week, the course will be worth two credit points.
2. No credit is awarded for some required courses, for example, Physical Education.
3. The university grants transfer credits depending on individual department and institute guidelines. Transfer of credits will be reviewed and credits will be granted if the courses the applicant has previously taken are similar to courses offered by Tamkang University. Each department or institute may individually determine how many transfer credit points should be awarded.
4. Freshmen, sophomores, juniors, and fourth year Architecture majors are required to take no less than 12 and no more than 25 credits per semester. Seniors and fifth year Architecture majors are required to take at least 9 credits and no more than 25 credits per semester. For those whose GPA is over 4 (or 80 points and above), additional courses of up to six credits per semester may be granted. Graduate students may individually decide how many courses to take per semester and no less than one subject. The maximum number of credit points for graduate students is 15 per semester.

Graduation Policy

1. The duration of bachelor degrees is four years (five years for Architecture). Undergraduate students may delay graduation for no more than two years.
2. The duration of master degrees is 1-4 years; while doctoral students will take 2-7 years to complete their PhD.

Total Credits Required for Graduation

Undergraduate Programs

Students are required to complete at least 128 credits (for Architecture majors, 143 credits are required) to be eligible for graduation.

Those who meet all of the following conditions may graduate one semester or one year early:
(1) Completion of all required credits (compulsory and elective);
(2) Grades average above 80 each semester;
(3) Grade average for behavior/conduct exceeds 80;
(4) Overall performance within Top 10% of academic department; school transfer students based on their transferring years.
(5) Meeting all university, college and department requirements.

Graduate Programs

1. Master’s candidates must complete at least 24 credits, excluding a Master’s thesis, to graduate.
2. Ph.D. candidates must complete at least 18 credits, excluding a doctoral dissertation.

**Dismissal**

Students are subject to dismissal from the university under the following conditions:

**Undergraduates**

1. Bachelor students from each department who fail half of the total credits taken in one semester and do so consecutively twice (any semester of failing half of total credits before discontinuing one’s studies is considered as “consecutively”) will be expelled.
2. The following undergraduate students who fail in two-thirds of their semester credits in a semester for the second time will be expelled from school:
   (1) Overseas Chinese of foreign nationality.
   (2) Chinese students.
   (3) Foreign students.
   (4) Overseas Mongolians and Tibetans who come to Taiwan to pursue their studies.
   (5) Aborigines.
   (6) Children of diplomats stationed abroad.
   (7) Those students who meet the criteria established by the Ministry of Education and make a good grade in sports.
3. Disabled students or students who are taking less than ten academic credits are not bound under the above two rules. Credits for Military Training (or Nursing) and Physical Education should be counted in the number of credits mentioned in the aforementioned three sections credits awarded for the courses “Military Training (or Nursing)” and “Physical Education.” If there remain credit hours not included in the calculation of the total amount of attended credit hours, a report may be sent to the Academic Affairs Committee, which after review can then be acted upon.

**Graduate Students**

MA and Ph.D. students are subject to forced discontinuation of studies under the following conditions:

(1) MA program students whose 4-year course of instruction and Ph.D. program students whose 7-year course of instruction are about to expire, and who fail to take all the required courses and earn all the necessary credits.
(2) Students who are permitted to study for a Ph.D. degree directly and who fail to take all the required courses and earn all the necessary credits when their 7-year course of instruction is about to expire since the time they entered the Ph.D. program.
(3) Ph.D. candidates who fail twice in their comprehensive examinations.
(4) Students who fail in their degree examination but are not qualified to take it again, or they are qualified to take it again but fail in it again.
(5) Graduate students found to be plagiarizing or cheating in their relative thesis papers, creations, performances, letter reports or technology reports.
JUNIOR YEAR ABROAD AND INTERNATIONAL EXCHANGE STUDENT PROGRAMS

A Pioneer in Overseas Study Programs
Tamkang University was the first tertiary institution in Taiwan to introduce a Junior Year Abroad Program. In July 1992, when the Ministry of Education (MOE) put forth regulations for undergraduates studying abroad, Tamkang students had already been participating in short-term seminars overseas. Due to Tamkang’s tireless efforts, in 1994 the MOE finally approved Tamkang’s petition to permit male undergraduates to spend their junior year studying abroad. Under this program, the credit points earned by students at their host universities were transferred back to their undergraduate degrees at Tamkang University. This initiative signaled a milestone in Taiwan’s policy of higher education.

Each year since 1994, Tamkang University has sent juniors overseas to undertake a year of study at one of TKU’s sister universities. To date, over 7677 students from Tamkang University have studied at Tamkang’s overseas sister universities under the Junior Year Abroad Program. In the 2018-2019 academic year, 648 students spent their junior year studying overseas, at 111 universities in 19 countries.

A Brief History of Tamkang’s International Exchange Student Programs
Tamkang University’s International Exchange Program enjoys formal academic ties with over 207 universities around the world. Under the International Exchange Program, Tamkang has sent undergraduate, master and doctoral candidates to study or conduct research at a variety of overseas universities, such as California State University—Sacramento & Long Beach, Suffolk University, Winona State University, and many others.

Conversely, over 2054 overseas students are now studying at Tamkang University, either as exchange or self-enrolled fee paying students. The university provides international students with scholarships for Chinese language classes to help such students gain proficiency in Mandarin and prepare for regular university classes. Additionally, Tamkang offers several courses specifically designed for international students on Chinese culture, history, language, and aesthetics, and offers more than 800 courses taught in English, to meet the demands of both local and international Tamkang students. Thanks to its continued efforts over the past decades, Tamkang University is now an international university that transcends geographic and ethnic boundaries, a miniature “global village.”
TAMKANG RESEARCH CENTERS

CHAMPION INCUBATOR CENTER

Director: Jen-Shiun Chiang (江正雄)

The Champion Incubator Center assists start-ups and small companies by offering business and technical support from university experts and industry consultants. It also leases office space upon request. The Center encourages university professors to work on joint research projects funded by government agencies and large industrial sponsors. Research findings are then further modified toward practical solutions and delivered as commercial products. The scope of research includes, but is not limited to, the following:

1. Multimedia, information technologies and software applications
2. Robotics, artificial intelligence (AI), and manufacture automation technologies.
3. Chinese E-commerce and internet information services
4. Cultural and creative industries
5. Biotechnology and environmental technologies
6. Marketing strategy analysis and management consultation

RESOURCE CENTER FOR THE VISUALLY IMPAIRED

Director: Tung-wen Cheng (鄭東文)

Tamkang University began to enroll visually impaired students in 1969. For over four decades, TKU has dedicated itself to the development of a friendly learning environment for the visually impaired. The staff members at the Center of Resources for the Blind have successfully developed adaptive computer systems, established the “Barrier-Free World Wide Web system” (the Chinese-based e-library for the visually impaired), and produced textbooks, journals, and magazines in Braille.

The Center’s objectives include:
1. Providing academic, vocational, emotional, and life assistance to students with disabilities;
2. Developing and promoting a comprehensive information system for the blind;
3. Establishing the Assistive Device Center for college students with visual impairments;
4. Providing other related services.

WIND ENGINEERING RESEARCH CENTER

Director: Cheng-hsin Chang (張正興)

Established in 1998, the Wind Engineering Research Center at Tamkang University (WERC) is the leading wind engineering research institute in Taiwan. The goal of WERC is to pursue academic excellence and provide solutions to engineering problems. Its research team covers a wide range of areas in the field of wind engineering, such as tall building aerodynamics, cable supported bridges, large span roof structures, mitigation of wind-induced vibration, indoor and urban ventilation, wind tunnel testing, Computational Fluid Dynamics (CFD) simulation, full scale monitoring, information technology applications, and wind code developing.

Over the past decade, the center has conducted numerous integrated research projects for government agencies, such as the National Science Council (NSC) and the Architecture and Building Research Institute (ABRI), and held international conferences, workshops, and seminars. In terms of engineering, aside from conducting a great number of wind tunnel tests for pedestrian comfort evaluation and design wind load, the center has also developed a user-friendly system that conforms to current Taiwanese wind code practice. This wind code system has been made available for free public use, and has received positive feedback from industry experts. The long term objective of the center is
to become a world renowned wind engineering research institute and a first-class solution provider for the local wind engineering community.

CENTER FOR WATER RESOURCES MANAGEMENT AND POLICY RESEARCH

Director: Shyh-fang Kang (康世芳)

The Center for Water Resources Management and Policy Research was established on 1st May, 1999. As an independent research institution, its mission is to support the government in water resources management policy analysis and planning. This center enlists experts in hydrology, water resources planning, environmental sciences, agricultural fields, and public administration to provide the public with consultation services on water resource policies and management strategies. As water resources problems grow ever more complex and difficult to solve, there has emerged a need to further the research in water resources policy and institutions, including those of countries from which lessons relevant to Taiwan’s situations may be derived. The center will strive to be recognized as an indispensable think tank of national water policies.

CENTER FOR DIGITAL LANGUAGE RESEARCH

Director: Chin-hwa Kuo (郭經華)

The Center for Digital Language Research was founded in February, 2008. The center conducts research on digital technology applications that assist in language learning. Its two central goals are to: create models and strategies for digital language learning and to further develop the E-Calligraphy Writing System. The Center works with organizations outside TKU to carry out research and development projects and product consulting, and to hold academic meetings and conferences. It also assists TKU faculty members in conducting research projects related to the center’s areas of specialization.

These areas of specialization include:
1. Language Learning
   (1) Language learning resources, tool analysis and collection
   (2) Language learning: design of strategies and methods
   (3) Language learning: design of models and curricula
   (4) Language learning: design of staff training curricula
2. Digital Technology
   (1) Development of digital calligraphy tools
   (2) Development of handwriting technology
   (3) Development of digital language learning tools
   (4) Management of learning tools and online services
3. Digital Technology Applications for Language Learning
   (1) Design, development, and maintenance of the TKU digital learning environment
   (2) Design of online language learning courses and multimedia assistance tools
   (3) Provision of services to groups of learners and instructors

Research Development Center of Construction Law (CLC)

Director: Su-ling Fan (范素玲)

The Research Development Center of Construction Law (CLC) was established in August 2010. The center offers consulting services based on demand from industry, government, and academia. The services rendered by CLC include:

1. Construction and legal-based consulting services
2. Construction technology evaluation services
3. Construction and legal education training and promotion
4. Handling of forensic examination for court-appointed engineering dispute affairs
5. Big data, BIM API, AI and VR related projects.

THE INTELLIGENT AUTOMATION AND ROBOTICS CENTER

**Director: Ching-Chang Wong (翁慶昌)**

Established in 2011, the Intelligent Automation and Robotics Center is an interdisciplinary research center that employs specialists from the TKU departments of Electrical Engineering, Mechanical and Electro-Mechanical Engineering, and Computer Science and Information Engineering. The goals of the center are to undertake projects in accordance with the national development strategy for intelligent automation, to integrate resources efficiently to conduct research and development in automation and robotics, and to enhance Taiwan’s international competitiveness in the automation and robotics industry. The center’s major tasks include: conducting research and development in the field of intelligent automation and robotics, carrying out personnel training, strengthening ties between Tamkang and related industries, promoting academic exchange and cooperation at home and abroad, and providing consulting services for the design and development of industrial automation and robotics. Research efforts involve combining the domain knowledge of mechatronics, robotics, Artificial Intelligence (AI), sensing and perception, machine learning, machine vision, human machine interfaces, embedded systems, information control and other knowledge to design new technologies in the area of automation and robotics. The center’s vision is to partake in long-term collaboration with the National Science Council (NSC), the Ministry of Economic Affairs, and related industry partners to commercialize newly discovered technologies and to produce robots that will prove useful in the real world. The center intends to promote these new technologies in new markets, thereby creating a vehicle for Taiwan’s future economic growth.

TRANSPORTATION AND LOGISTICS RESEARCH CENTER

**Director: Yuh-horng Wen (溫裕弘)**

With the emerging information and communication technologies applied to transportation and logistics, Transportation and Logistics Research Center was established in 2014 to undertake projects in accordance with the development strategy for intelligent transportation and logistics systems worldwide, to integrate resources efficiently to conduct international or domestic research and development among government, universities and industries. The center’s major tasks include: conducting research and development projects in the field of intelligent transportation and logistics systems, carrying out educational training, strengthening linkages among government, Tamkang and related industries, promoting academic exchange and cooperation at home and abroad, and providing consulting services. Research efforts involve combining the domain knowledge of transportation, logistics, internet of things (IoT), cloud computing, big data and other domain know-how to provide useful tools for existing and future transportation and logistics systems. The center’s vision is to partake in long-term collaboration with the Ministry of Transportation and Communications (MOTC), the Ministry of Science and Technology (MOST), the Ministry of Economic Affairs (MOE) and related industrial partners to commercialize newly deployed technologies in the field of transportation and logistics.

CENTER FOR MURAKAMI HARUKI STUDIES

**Director: Chiu-kuei Tseng (曾秋桂)**

Haruki Murakami is a contemporary famous writer of Japan known globally. He has been a Nobel Prize candidate repeatedly to the present. Although he has not received the award yet, he is a writer representing Japan. The members of this project, who belong to the Department of Japanese at Tamkang University, have established the “Haruki Murakami research laboratory” since 2011 and contributed to promoting Haruki Murakami research in Taiwan by organizing three Haruki Murakami international symposiums. Although our laboratory is not yet three years old, the outcomes of our academic activities have been highly recognized and evaluated among various academic circles. Encouraged by the past academic achievement and well-received evaluations, we propose a three-year project based on a careful analysis of Taiwan’s advantages and disadvantages and thorough planning of
effective growth strategies to reduce the school’s weakness. By steadily accomplishing each year’s objectives, the project aims to produce notable results in Haruki Murakami research, and ultimately plans to invite Haruki Murakami himself to Taiwan. In doing so, we would like to promote Haruki Murakami research as one of the distinctive educational and research characteristics of Taiwan, which will raise our country’s international recognition further.

The Center’s objectives include:

1. Improvement of the academic and facility features of Haruki Murakami Studies,
2. Advertising and marketing of Haruki Murakami Studies,
3. Promotion of international academic interchange of Haruki Murakami Studies,

**CENTER FOR DEVELOPMENT AND APPLICATION OF CLINICAL MEDICINE INFORMATION SYSTEMS**

*Director: Huan-Chao Keh (葛煥昭)*

The Center for Development and Application of Clinical Medicine Information Systems (CMIS) is a research center dedicated to the development of medical information systems, offering hospitals a variety of platforms for research. In Taiwan, medical centers generate data in real time and such research information can be better utilized through integration of technologies. From its inception, CMIS has maintained close collaboration with numerous hospitals. Over the years, a pressing challenge has been the development of computer systems that can handle the heterogeneity of medical information and hardware. The proliferation of different system architectures makes it difficult to share critical medical information in a safe, reliable, and timely fashion. CMIS is making great contributions to hospitals with every step taken towards systems integration. TKU has stressed its three educational objectives, one of which is information-oriented education. With the close cooperation of hospitals, CMIS integrates digital knowledge and clinical practice environments, to better nurture students in the field of medical information processing.

**INFORMATION CENTER FOR WATER ENVIRONMENT**

*Director: Li-Chiu Chang（張麗秋）*

The Center for Water Environment (ICWE) was founded to promote research, create effective applications, integrate information systems, and strengthen academic work related to the field of water resources and environment. Through the combination of academic studies and practical research in cooperation with public and private business, the Center has sought to make tangible, positive contributions to society. The implementation and integration of information technology, accomplished through the efforts of the Center, allows considerable strengthening of related fields, as well. In order to meet the market demand for professional talent, the mission of the Center is to engage in teaching and practical and research training for undergraduate and graduate students to improve the quality of professionals. The Center for Water Environment (ICWE) maintains the spirit of innovation, information integration, forecasting, and the further development of new research values through closer integration of research teams.

**CENTER FOR OCEAN AND UNDERWATER TECHNOLOGY RESEARCH**

*Director: Jin-Yuan Liu（劉金源）*

The Center for Ocean and Undersea Technology Research (COUTR) was recently established on December 26, 2016. The mission of the Center is to support the government policy on marine industrial development and to enhance the University’s interdisciplinary studies on marine science and technology. Being surrounded by a marine environment, Taiwan has a unique opportunity to utilize the marine resources for sustainable development. The near-future objective of the Center includes the R&D on sonar engineering, underwater cultural heritage, and applications of deep ocean water. The Center shall attract experts, inside or outside the campus, to form national or international teams to
carry projects supported by the public or private sectors, so as to fulfill the mission of the Center. As a unit in the University, it is also important to offer the opportunity for faculty and students, through teaching or research, to those who are interested in ocean science and undersea technology.
PROGRAMS OF STUDY

CENTER FOR GENERAL EDUCATION
AND CORE CURRICULUM

Director: Gan, Yung-ying (干詠穎)

The Center for General Education and Core Curriculum (CGECC) was established in 1995 for the purpose of reforming Tamkang University’s General Education Program. This reform was based on the belief that students must be equipped not only with specialized knowledge, but also with the ability to adapt to a rapidly changing society. Through its well-rounded approach to education, the center instills in students self-responsibility and a conscientious attitude toward the broader community and the global environment.

Currently, 408 faculty members from the center or related departments teach courses in the CGECC’s General Education Program. The center functions as an independent department and is responsible for course design, teaching support, and other tasks. The faculty members hired by the center are divided into three major fields: social analysis, philosophy and religion, and art appreciation and creation. The center also caters to students’ needs by offering elective courses.

Mission

The center was established in the hope of developing curriculum programs to fulfill the ideal of general education. Its courses enable students to more efficiently access information, develop a view for the future and a global vision on which to base their future goals and objectives.

The Center aims to improve the quality of general education and prepare students for a changing world by instilling in them the following qualities:
1. A global perspective
2. Information literacy
3. A vision for the future
4. Moral integrity
5. Independent thinking
6. A cheerful attitude and healthy lifestyle
7. A spirit of teamwork and dedication
8. A sense of aesthetic appreciation

Faculty

Professors
Chen, Hsin-chih (陳杏枝) ; Lee, Pei-yee (李珮瑜) ; Han, Kuei-hsiang (韓貴香)

Associate Professors
Hsu, Tsuo-ming (徐佐銘) ; Wang, Chih-ming (王志銘) ; Philip Shieh (謝朝鐘) ;
Gan, Yung-ying (干詠穎) ; Tai, Chia-jwu (戴佳茹) ; Sung, Hung-yen (宋鴻燕)

Assistant Professors
Wang, Ling-kang (王靈康) ; Chen, Hui-Yun (陳慧勻) ; Wu, Wen-Chi (吳文琪)

Lecturers
Hu, Yen-wei (胡延薇) ; Huang, Wen-chih (黃文智) ; Hwang, Yih-lin (黃奕琳) ;
Lan, Yu-hua (藍毓華) ; Teng, Yu-ying (鄧玉英) ;

The Program

The General Education Program consists of three types of courses: fundamental courses, general education and core courses, service and extra-curricular activities.
Fundamental Courses: 12 credits

1. Language Expression: (10 credits)
   a. Ability of Expressing in Spoken and Written Chinese (2 credits)
      This course aims to improve students’ communicative competence and to enable them to express
      themselves in an articulate and succinct manner.
   b. Foreign Languages and Drills (8 credits)
      This course equips students with a basic knowledge of a foreign language and the culture(s) in
      which the language is spoken. The course aims to heighten students’ interest in learning and to
      improve their communication skills.

2. Learning and Development (1 credit)
   This course aims to equip students with the skills needed to complete their university studies and to
   become capable, independent, and self-motivated learners.

3. Extracurricular Activities and Team Development (1 credit)
   By giving students the chance for practical participation in student clubs, this course hones students’
   skills in the fields of teamwork and leadership, project planning and practice, creative thinking and
   problem solving, and communication/coordination.

General Education and Core Courses: 14 credits

1. Humanities (2 credits required, 1 out of 4 categories)
   a. Literature and Classics
      Through the analysis and appreciation of Chinese and Western novels, poetry, prose, and
      well-known literary works, students are led into the realm of world literature, where they gain
      insights into a diverse range of classics.
   b. History and Culture
      This course develops students’ ability to view and analyze historical events and helps students
      gain an objective and practical knowledge of history.
   c. Philosophy and Religion
      This course encourages students to observe and analyze social phenomena and teaches students
      that philosophy and religion are an inextricable part of human life rather than spiritual constraints
      that limit human life.
   d. Arts Appreciation and Creation
      This course invites students to appreciate and analyze art and introduces students to a number of
      varying styles and techniques in the fascinating world of arts.

2. Society and Culture (2 credits required, 1 out of 4 categories)
   a. Global Outlook
      This course familiarizes students with concepts relevant to international relations and heightens
      students’ global awareness and their understanding of the modern world.
   b. Futures Studies
      Futures Studies encourages a forward-looking perspective and a view for the future that
      encompasses society, technology, the economy, the environment, and politics.
   c. Social Analysis
      This course aims to arouse students’ interest in social problems and to urge them to contemplate
      the moral standards of modern society. It also helps students face their difficulties head on and
      live a healthy life.
   d. Civil Society and Participation
      This course provides students with a firm grounding in the general principles of constitutional
      law. It aims to equip students with basic legal knowledge and produce well-rounded citizens.

3. Scientific Inquiry (2 credits required, 1 out of 3 categories)
   a. Information Education
      Education in Information Technology (4 credits): This course is designed for freshmen, not only
      to enhance their computer knowledge, including programming, network management, network
      communications, multimedia, video graphics and others, but also to improve their abilities for
      obtaining desired information from Internet. At the same time, related topics, like e-commerce,
      computer virus and information security are introduced such that students can have enough skills
for further investigating and learning more advanced techniques or applications. Finally, students can apply those abilities and skills to their daily life.
b. Global Technological Revolution
   This course describes the development of science and technology in the past and its potential impact on our future and the environment.
c. Natural Sciences
   This course helps students explore the laws of nature and learn the principles of natural sciences, while also providing non-science majors the opportunity to broaden their horizons.

Service and Extra-curricular Activities: 0 credit
1. Physical Education
2. National Defense Education
3. Service and extra-curricular activities
4. Sport competition and performance
5. Art competition and performance
6. Other activities

The Organization of the General Education Committee

Fundamental Courses and Coordinators
1. Ability of Expressing in Spoken and Written Chinese
   Coordinator: Chair of the Chinese Literature Department
2. Foreign Languages and Drills
   Coordinator: Chair of the English Department
3. Learning and Development
   Coordinator: Chair of the Graduate Institute of Educational Psychology and Counseling
4. Extracurricular Activities and Team Development
   Coordinator: Chief of the Office of Military Education and Training

General Education and Core Courses
1. Literature and Classics
   Coordinator: Chair of the Department of German
2. History and Culture
   Coordinator: Chair of the Department of History
3. Philosophy and Religion
   Coordinator: Coordinator of Philosophy and Religion courses
4. Arts Appreciation and Creation
   Coordinator: Coordinator of Arts Appreciation and Creation courses
5. Global Outlook
   Coordinator: Chair of the Graduate Institute of International Affairs and Strategic Studies
6. Futures Studies
   Coordinator: Chair of the Graduate Institute of Futures Studies
7. Social Analysis
   Coordinator: Coordinator of Social Analysis courses
8. Civil Society and Participation
   Coordinator: Chair of the Public Administration Department
9. Education in Information Technology
   Coordinator: Chair of the Computer Science and Information Engineering Department
10. Global Technological Revolution
    Coordinator: Chair of the Department of Mechanical and Electro-Mechanical Engineering
11. Natural Sciences
    Coordinator: Chair of the Department of Chemistry
Course Descriptions

Fundamental Courses

Ability of Expressing in Spoken and Written Chinese

A1376 Ability of Expressing in Spoken and Written Chinese (3): This course aims to improve students’ oral and written ability in Chinese and to help them appreciate the value and beauty of the Chinese language.

Foreign Languages and Drills

T0466 English (I) (2/2): The purpose of this course is to improve students’ reading ability by parsing articles on a range of topics. Course objectives include: developing good reading habits, forming better comprehension skills and a broader vocabulary, building connections between language and culture, and developing students’ ability to think independently.

T0467 Japanese (I) (2/2): The 50 sounds of Japanese and their symbols are introduced and explained in this class; followed by basic phrases and sentences.

T0468 Russian (I) (2/2): This course is designed for the beginning learner of the Russian language and Russian culture. Students start with the basic letters and sounds, and with films and other multimedia to enhance their memory, and thus the concept of learning grammar and conversation increases students’ basic conversation skills.

T0470 Spanish (I) (2/2): In this course, students will learn the Spanish alphabet and pronunciation, basic grammar structures and simple sentence concepts, which will serve as the basis for future Spanish study.

T0479 French (I) (2/2): This course teaches students the basic vocabulary and grammar of French. After previewing French songs and films, the class will partake in group discussions that allow students to share their opinions and improve their level of expression. The course also consists of cross-cultural comparison of French and Chinese culture.

A0766 German (I) (2/2): This course is designed to familiarize students with daily spoken German as well as listening and speaking skills. The content includes a wide variety of authentic multimedia materials, as well as audio and video texts. Regular group discussion and role-play is also an essential component of the course content.

A0050 English (II) (2/2): The purpose of this course is to improve students’ reading ability by parsing articles on a range of topics. Course objectives include: developing good reading habits, forming better comprehension skills and a broader vocabulary, building connections between language and culture, and developing students’ ability to think independently.


A0767 German (II) (2/2): This course is designed to familiarize students with daily spoken German as well as listening and speaking skills. The content includes a wide variety of authentic multimedia materials, as well as audio and video texts. Regular group discussion and role-play is also an essential component of the course content.

A1328 Spanish (II) (2/2): By the end of this course, students will have a basic grasp of Spanish verbs, simple conversation, and grammar.
A1329 French (II) (2/2): This course covers French grammar and vocabulary and helps students improve their speaking, reading and writing skills through daily conversation.

T0469 Russian (II) (2/2): This course emphasizes training in listening and speaking everyday Russian with more complicated structures.

Learning and Development

T0863 Learning in University (1): This course aims to provide students with the basic knowledge and skills required by university students and to help students gain a better understanding of their own learning styles, learning strategies, and ways of adjusting.

T0871 Motivation and Stress Management (2): The main purpose of this course is to help students learn theories concerning motivation and the application of stress management. The course covers the psychological aspects of motivation and stress, stress management skills and strategies, and other related topics.

T0951 Learning Adaptation and Management (2): This course provides theoretical and practical aids to facilitate whole person growth among students. Through this course, students learn, adapt and grow by developing skills in a diverse range of areas: academic, psychological, social and career-based. During the course, students take part in various activities and group work, and complete assignments and tests that train their skills in the following fields: time management, self-exploration, career assessment, learning and study skills, and interpersonal skills.

T2921 College Student Career Development (2): This course is designed to help students understand the diverse aspects of career development and to inspire students’ self-personality traits, career interests, values, career beliefs, and to explore the world of work. The impact of family expectations on career decisions enhance students’ career planning knowledge essential to creating a self-ideal future.

Thinking Skills and Techniques (2): This course offers the learners self-training in logical and analytic abilities with knowledge and application of thinking skills and techniques. The learners will cultivate their own thinking attitudes and habits to engage in self-directed learning and become independent thinking college students.

Extracurricular Activities and Team Development

T0800 Service-Learning of Association (2): This course integrates volunteer activities with concepts of service-learning to guide student learning by doing and growing through self-reflection. The course also emphasizes knowing organizational management through teamwork and cooperation.

(T2637, T2638, T2639) Learning and Practice of Clubs (1): Through this course, students will gain a basic knowledge of how clubs are organized, how events are planned, and how communication and cooperation works within teams. By participating in student clubs, students learn to accept a diverse range of opinions, as well as learning about interpersonal relations, problem solving and other essential life skills.

T2937 Student Clubs and Professional Career: Leadership and Management (2): This course is built on the foundation of “Learning and Practice of Clubs”, a required course for freshmen. It aims at providing opportunities for students to enhance their Positive Thinking, Creativity, Communication and Expression, Problem Solving, and Team Spirit. Students should acquire the knowledge of how to integrate student club leadership experience with their future career plans.

T2938 Activity Program Design (2): This course improves student abilities in designing and planning programs by analyzing the types and examples of events and by participating in workshops.

T2939 Associations Project Management (2): This is an introductory course on the key concepts of planning and executing projects in student clubs. We will learn the benefit and effectiveness of project
management by identifying factors that lead to project success, learning how to plan, analyze, and manage large scale activities while in university.

**General Education and Core Courses**

**Literature and Classics**

A0377 Classical Mythology (2): This course provides students with an understanding of the essential myths of the classical world. Special attention is paid to Greco-Roman myths and early Western civilization, with an emphasis on recurrent motifs or figures, mythical allusions, and intellectual or religious elements. This course also provides students with an opportunity to analyze myths written by Homer and other Greek playwrights.

A2928 Selected Readings in Chinese Literature: Love and Life (2): This course is for students to examine classical literature, to cultivate their ability of contemporary interpretations, and to reflect over the meaning of love and life.

A2929 Selected Readings in Chinese Literature: Society and Life (2): This course is for students to examine classical literature, to cultivate their ability of contemporary interpretations, and to reflect over the meaning of society and life.

A2930 Selected Readings in Taiwanese Literature (2): This course guides students in understanding and exploring the stages of development in Taiwanese literature and its important issues. This is then complemented by readings and investigations linking such issues to Taiwan's literary history, so as to provide a clear understanding of the historical development of Taiwan literature.

A2931 Science Fiction (2): The aim of this course is to read and discuss noteworthy examples of science fiction literature, along with a selected study of and introduction to the latest works in science fiction, including analysis of classic science-fiction movies.

A2932 Modern Classics of English and American Literature (2): Modern Classics of English and American Literature" introduces students to a selection of poetry and prose from the twentieth and twenty-first centuries. The two main reference texts for the course are *The Norton Anthology of English Literature (NAEL)* and *The Norton Anthology of American Literature (NAAL)*. Students will learn about and critically respond to the selected poetry and prose by situating them in historical and political contexts as well as formal/aesthetic contexts. In addition, students will learn about several important perspectives in contemporary literary theory and criticism: postcolonial criticism, ecocriticism/eco feminism, and animal studies. Grading will be based on a PowerPoint presentation, a written assignment, participation in class, and attendance.

F0807 Japanese Literature and Translation (2): This course introduces Japanese literature in a chronological sequence to enable students to better understand literary texts. Through translation, students will appreciate Japanese literature and acquaint themselves with the essence of Japanese culture.

F0808 The Bible as Literature (2): This course aims to explore the relationship between the Bible and literature. Class discussions will focus on the Bible, yet will also encompass an element of eastern mythological thinking for comparison and contrast. Students are required to make group presentations and identify Biblical allusions contained in movies and literary works.

F0810 Selections of Japanese Novels and Movies (2): This course focuses on the differences between movies and the novels from which they are adapted. Special attention is paid to the differences between the words used in the novels and the images portrayed in the movies. Through group discussions, students will gain a better understanding of Japanese culture and beliefs.

F1134 Spanish and Latin American Literature (2): The aim of this course is to teach the students
how to appreciate a masterpiece of western literature by its forms of expression, thoughts, and all the dimensions of Humanity to give the students a good discipline to learn how to think deeply and how to increase their capacity of expression, so that they can be a good leader in this digital and global age.

F1135 Selected Readings in German Literature (I) (2): The course aims to introduce the major works of German literature and to help students appreciate German literature through the exploration and discussion of the works as well as related literary trends.

F1136 Introduction to Russian Literature (2): The aim of this course is to read and discuss the most famous Russian novels during the 19th century: Pushkin’s Snowstorm, Tolstoy’s Anna Karenina, War and Peace, and so on.

F1137 French Literary, Life and Culture (2): The aim of this course is to read and discuss the most famous French novels during the 18th, 19th and 20th century.

F1138 Selected Readings in German Literature (II) (2): The course aims to introduce the major works of German literature and to help students appreciate German literature through the exploration and discussion of the works as well as related literary trends.

F1139 Introduction for the Modern and Contemporary French Literature (2): Modern and contemporary French literature (basically with a choice of texts from the 19th to 20th centuries, thus the class can focus on the 20th century according to the need of the students).

F1140 Masterpieces of Hispanic Literature (2): To appreciate the masterpieces of literature of Hispanic world.


T2642 Cultural Imagination in Classical Literature—A Lesson on Life (2): This course is for students to examine classical literature, to cultivate their ability of contemporary interpretations, and to reflect over the meaning of their life.

History and Culture

Category I: History of Taiwan

A3454 The Exploration of Taiwan History (2): This course is designed to increase students’ general knowledge of Taiwan history and culture.

T2972 Maritime History and Culture of Taiwan (2): The purpose of this course is to help students understand the Maritime history of Taiwan like the Chinese Junk, Trade, Underwater archaeology, and further more to let the student learning more about humanities.

Category II: History of Society and Culture

A2020 Aesthetics: Sinological Arts (2): This course discusses paintings, calligraphy and other related topics in ancient China.

Category III: Persons in History

A2062 Chinese History and Historical Figures (2): This course places historical figures in their historical contexts, enabling students to view the interaction between people and time.

A2368 Modern Historical Events (2): Through analyses of important historical events and aristocracies, this course reveals truths, and the relationships between historical events. This course also discusses the features of key historical figures.
A2505 Western History and Historical Figures (2): This course covers two sections. The introductory section explains how to analyze and assess historical figures. The other section aims to choose major historical figures in Western history and provide critical studies of their lives, actions, and outstanding contributions.

Philosophy and Religion

1. Basic Courses

T0099 Ethics (2): This course of Ethics, or moral philosophy, seeks to guide the students to reflect on moral issues, exploring how moral norms are justified and how moral characters are cultivated. In addition, traditional answers provided to the questions above are introduced to help to ponder on why we should be moral.

T0100 Introduction to Philosophy (2): This course has two objectives: (1) guiding students to observe and view our life in a philosophical way and (2) encouraging students to further read classical philosophical works, such as those written by Plato, Aristotle, and Descartes. Class discussions might include the following topics: (1) knowledge and perception; (2) the question of reality; (3) man and God; (4) freedom and responsibility; (5) moral theory; (6) foundation of government; and (7) aesthetic experiences.

T0170 Medical Ethics (2): The problems discussed in this course are moral issues related with medical treatments and medical research, such as euthanasia, abortion, artificial fertilization, and genetic engineering.

T0338 Selected Readings in Philosophy (2): This course is offered for students without prior knowledge of philosophy. Both Western and Chinese classic philosophical works will be introduced, and students are encouraged to interpret the classic texts from contemporary viewpoints.

T0339 Introduction to Religion (2): The course aims to provide students with an overview of the major religions in the world; the contents include their main doctrines, histories, developments and practices.

T0348 Study on Thanatology (2): The study of thanatology involves both vertical and horizontal dimensions. The vertical dimension covers four disciplines, namely thanatology education, terminal care, grief consultation, and funeral management, while the horizontal dimension encompasses six disciplines, namely philosophy, religion, psychology, sociology, biomedicine, and nursing studies.

2. Applied Ethics

T1238 Environmental Ethics (2): This course investigates the following main issues: (1) What are the global and local environmental problems related to ethical life? (2) Do we have any ethical reasons to support our promotion of environmental protection?

T1810 Professional Ethics (2): This course introduces basic doctrines of moral philosophy by presenting actual cases in the professional arena to help students to understand the role these doctrines play in the business world and how relevant issues may affect their personal lives. The course aims to, besides getting ideas about ethical issues in various professions, cultivate students’ abilities and practices in reflection and making decisions on moral issues.

T2005 Literature and Philosophy of Eroticism (2): If life is a duet of sensibility and rationality, then literature and philosophy are the works of life. Among these works, eroticism is a main theme of human life. As a course of core curriculum, Literature and Philosophy of Eroticism aims to explore the context and movement of eroticism.
T2917 Logic and Philosophy (2): Logic is one of the oldest disciplines in the western world, and it has always been connected to philosophy. This course is dedicated to all who have ever thought about these two subjects.

T2919 Aesthetics: Theory and Practice (2): This course will introduce students to three kinds of art, i.e., literature, photography and music. Through the practice of writing, photography and composing, students will explore the aesthetic experience of language, visual and auditory. Furthermore they are encouraged to review the relevant aesthetic theories according to their own experience.

T2917 Taiwanese Religions (2): This course attempts to promote a better understanding of the religious culture of Taiwan. The first part of the course gives an overall introduction of Taiwanese religions, including the Taiwanese folk religion, Buddhism, Christianity, and some other religions. The goal is to teach students to respect different religions. The second part of this course addresses religious change. By observing how religion responds to changing times including the new social arrangements and the challenge of scientific progress, students enhance their ability of critical thinking.

Arts Appreciation and Creation

A0457 Performance Arts (2): ‘Performing Arts’ is an umbrella term, which contains wide definitions. This module can be divided into two sections: Euro-American contemporary theatre and Asian theatre. Images, videos, play texts and theatrical exercises will be applied as materials to introduce intercultural performing arts to the students. In addition to introducing various performing forms, the students will also be asked to conduct a theatre piece in order to further understand the making of theatrical works.

A0544 Introduction to Music (2): Music plays an important role in our life. It enhances our perspectives in aesthetics and spirituality. In order to appreciate music, we need to understand its core elements. This course aims to introduce basic elements that appear in all kinds of music. Students will be able to analyze music and develop a more critical ear while listening to music.

A2938 The Introduction of Taiwanese Theater (2): In this module, Taiwanese theatre related researchers and practitioners will be invited to give an overall understanding of various aspects of Taiwanese theatre, from traditional theatre in Qing dynasty to contemporary theatre, from Xingju in the postwar era to improvisational theatre. In addition, this module also emphasizes on connecting students with local theatre groups, which are based in the Tamsui area, in order to help students learn arts outside the university.

T0334 Digital Content Development (2): Digital content includes game, audio and video, mobile applications, publishing and archive, learning, content software and network service. The activities include exploring, discussion and analysis of the digital content industry, management and design of digital works.

T0336 Introduction to Digital Arts (2): Digital arts includes publishing, archive, visual arts, animation, music and game. Activities include appreciation, criticism, analysis, exploring, and designing of digital arts.

T1287 Music Master Works Appreciation and Interpretation (2): The goal of this course is to introduce ideas and listening strategies to deepen one’s relationship with music. Music will be the central axis; the horizontal will explore the western classical music development and evolution of styles; and the vertical will explore the understanding of the nature and structure of music, musical instruments, types of musical forms, and musician biographies, etc. Finally, from among the great classical works, students will gain a deeper knowledge and appreciation of the history, aesthetics, techniques, forms, and genres of Western classical music.

T2013 The Appreciation of Western Opera (2): Opera was invented to combine the best of all possible worlds--Music, Literature, Drama. This course is to introduce the beginning and development of the stories, authors and the history of Western Opera. At the same time students learn to analyze and
interpret the styles of Opera creation.

**T2014 The Art of the Application of SHU-FA (2):** This course introduces different applications of traditional calligraphy to the arts.

**T2016 The Basic Sketch Skill of Model Art (2):** The content of this course not only involves the technique of drawing, but also includes training in other abilities, such as: our sensibility to things, independent thinking, judgment of beauty, aesthetic literacy, flexibility in using media, etc., but also takes into account the content and skill of a work, and the progression of mind and thought of an artist while a creative activity is in process.

**T2104 The Art of Piano (2):** This course will introduce the beauty of piano music; its various styles including classical, jazz and popular will be included. After film discussions, students will be able to discern what a pianist is.

**T2105 The Dialogue Between Music and Art (2):** This course will introduce the basic elements, structure, and styles of music and arts. With in-depth listening and analysis, students will learn how to appreciate great works of music and art. They will be able to connect feelings between the various forms of arts.

**T2657 Art and Life--Dialogue with the Great Artists (2):** “Art & Life”, a series of art lectures concerning visual art, architecture and music, intends to enrich one’s cultural heritage and to cultivate one’s character. In this course, we invite famous Taiwan artists to give talks to our students. Through sharing their works and life experiences, we hope this may expose our students to a broader cultural and international of viewpoint and furthermore elevate the student’s ability of critical thinking and the potential creativity of the mind.

**T2916 Developing Nonverbal Expression Through the Dancing Arts (2):** Today, the notion that everyone can dance or the physical body has an ability to speak has gradually declined. As the course integrates theory into practice, it focuses on guiding students to develop nonverbal expression through the dancing arts. By means of embodied experience, improvisation, and performance, the student will be able to further understand him/herself, increase communication and problem-solving skills, and enhance creativity and collaboration in teams.

**Global Outlook**

**T0831 Current International Politics (2):** This course focuses on international relations. It consists of two main elements: an introduction to the major global agents in various regions and an analysis of international trends of globalization and regionalism.

**T0833 Global Environmental Protection (2):** This course focuses on the following topics:
Part 1: General environmental topics such as energy sources, global warming /climate change.
Part 2: Pollution and protection in Asia, America, Europe, Australia, and Africa.
Part 3: Sustainable development and major environmental treaties.

**T0834 The EU and Its Integration (2):** This course introduces the creation and historical evolution of the European Union. Its primary goal is to provide a broad understanding of the EU’s past, present and future. Made up of several EU-related themes, the course describes how the EU operates as well as its achievements in public policy.

**T0835 Globalization of Culture (2):** One of the goals of this course is to develop students’ multi-cultural awareness. This is achieved through comparisons of cross-strait culture and education. Another course objective is to provide students with the knowledge necessary to interact with people of various cultures.

**T0837 East Asia and World Affairs (2):** In the 1980s, East Asia emerged on the world scene as a powerful economic entity. Ever since, it has been working hard to achieve greater economic prosperity, political stability and environmental security. The goal of this course is to explore present-day East Asia as it moves toward the formation of a united Asian community.
T0838 China’s Rise: Building a Harmonious World (2): This course explores the status quo, problems, and prospects associated with Taiwan/China relations in the context of today’s rapidly changing global system.

T0839 Economic Globalization (2): This course explores how politics have been used to shape the economic system. It presents a comprehensive discussion on how economic globalization works (including foreign trade, multinational direct foreign investment, movement of short-term portfolio funds, technological diffusion, and cross-border migration) and how it can be improved.

T0841 International Non-governmental Organizations (2): This course aims to explore how civil societies build democratic governments. One of the objectives of INGOs is to show their dissatisfaction with the state and government and to build a tight knit global society.

T0840 The America Today (2): The course aims to provide a panorama of the American political, economic development and social change. The course is designed to present an overview of region's development, and then is followed by an introduction of the current development of key countries in the region. In addition, current regional issues are highlighted in order to facilitate further discussion. The course aims to enhance students’ understanding of the continent and further cultivate their interests toward the American issue.

T2898 Jean Monnet Chair the EU and Its Integration (2): The EU is one of the most important international organizations in the international community. The EU has its own legal system. This course provides basic knowledge of the EU such as internal market, EU’s institution, four fundamental freedoms, common commercial policy and Euro area.

T2899 Jean Monnet Module the EU and Its Integration (2): This course provides an introduction of the European Union. It presents different theoretical perspectives and case studies to engender an appreciation of the complexity of European Integration. Included are not only the historical evolution of internal politics and political-economics but also contemporary issues of EU commercial policy, economic rivalry, and multilateral cooperation for the management of globalization.

T0537 Development of Globalization (2): The concept of globalization related to national economic, political and cultural dimensions has led to changes in values and life impact which is worthy to be addressed. This course will be a complete outline of globalization combined with actual case analysis.

T0536 Problems of World Human Rights (2): This course will introduce the development of the human rights of three generations. Besides it will deal with three issues of the most importance, namely distributive justice, multicultural society and transitional justice. The impact of globalization on the above mentioned three issues will be emphasized. The course will introduce the international institutions protecting human rights too. Finally the intervention based on the human rights will be examined.

T2943 Strategic Position of Taiwan (2): the course (1) informs students about Taiwan's relative position in the region and the world; (2) promotes an understanding of Taiwan through industrialization, globalization, democratization; (3) explores Taiwan's strategic position in various perspectives; and (4) analyzes Taiwan's strategic position through wargame.

Futures Studies

T0864 Futures Studies in the Environment (2): This course focuses on the development of a technological society and the issues that may affect such a society, like the prevailing power structure and sustainable development. The course gives students an insight into the development of high technology.

T1178 Futures Studies in Economics (2): The purpose of this course is to help students create economic alternatives and to assist them in rethinking and reshaping their future.
T1179 Futures Studies in Society (2): This course suggests different ways of looking into the various possible futures of society. Developing sociological and future-oriented attitudes is a key element to becoming a social scientist and to developing an epistemological basis from which to predict the future.

T1180 Futures Studies in Technology (2): This course is divided into three parts: (1) The Automation of the Future; (2) The City of the Future; and (3) An Introduction to Information Technology.

T1208 Futures Studies in Politics (2): This course focuses first on the definition, principles, characteristics and the framework of future studies in politics; second, on providing students with a brief history of the development of human society. It also analyzes the causes and effects of political cultures, political behaviors, political participation and political negotiation.

Social Analysis

A1493 Taiwanese Society and Culture (2): This course aims to help students from China or other foreign countries to get a better understanding of Taiwanese society and culture in a short period of time. It thus assists students in acclimatizing to life in Taiwan. It consists of two parts: (1) a general introduction to social, economic, and political development in Taiwan; (2) Taiwanese culture.

A1636 Interpersonal Relationships and Communication (2): The purpose of this class is to teach students the basic knowledge of psychology and use it in daily life to inspire students’ interests in Psychology and enhance their understanding of behaviors about other peoples, groups, and themselves.

A1970 Introduction to Economics (2): This course will equip students with the principles they need to make sense out of the conflicting and contradictory discussions of economic conditions and policies, such as the unemployment rate, the inflation rate, productivity, the interest rate, the government budget, and the current account.

T0066 Social Psychology (2): The purpose of this class is to teach students knowledge of social psychology and to use it in related daily life such as to understand people’s behaviors from the perspective of social psychology.

T0161 Culture and Mental Health (2): This course will offer the learners contemporary health psychology knowledge and skills with an introduction to the mental disorders that emerge from multicultural contexts as well as treatments with positive resources for mental health in our society. Moreover, the learners will be expected to demonstrate strength and skills in their report.

T0169 Human Rights and Social Justice (2): The purpose of this course is to provide knowledge in concepts, theories and practices of human rights and social justice. This course will then focus on the issues of human rights, social justice, equality and welfare. It will thus deepen the understanding in related issues seen in daily life.

T0189 Media, Mass Communication, and Culture (2): This course offers an introduction to media and mass communication, focusing on different communication cultures in different countries.

T0350 Society Changes and Social Education (2): In decades, rapid changes of social structure and diversification trends have occurred in Taiwan. Traditional culture and a sense of individual consciousness have impacted Taiwan strongly and have positively expanded educational reforms as well. In the end, do social changes affect education? Or, does education lead to changes both in social structures and values? To keep learners from getting lost, the discussions and reflections on social changes and educational interdependence will focus on how to adapt to the changing social environment in a risky moment.

T0351 Gender Roles and Relationships (2): This course offers an overview of the current literature pertaining to gender issues in society, with a special emphasis on the process of gender differentiation as well as gender relationships.
T0829 War and People (2): This course is intended not to analyze wars from the perspective of traditional politics or military. Instead, by centering on human nature, this course will observe the conflicts between human nature and war violence from the perspectives of the society, psychology, fine arts, etc.; and, moreover, it will deal with such issues as how people present wars by means of literature, music, painting, drama, and photography; and, finally, see whether people, in the course of all these, may be able to treat one another with genuine sincerity as well as compassion.

T0830 Well-being and Economics (2): Empirical research shows that income levels and economic growth have not led to an increase in people’s happiness. If the aim of government’s policies is to bring about widespread happiness, it may be necessary to revise and improve social policies to account for such an objective.

T1215 Traditional Society and Social Changes (2): This course focuses on the mechanism and theoretical models of social changes and introduces general trends in social changes in Taiwan and in the world.

T1594 Principles of Developmental Psychology (2): This course will focus our attention on the major domains of developmental psychology with an introduction to contemporary topics and application to what have been found in the related issues of human development. It is also expected to assist the learners to apply the acquired psychological knowledge bases to satisfy their needs of continuing self-understanding and self-enhancement.

T1822 Principles of Psychology (2): The purpose of this class is to teach students the basic knowledge of psychology and use it in daily life to inspire students’ interests in Psychology and enhance their understanding in behaviors about other peoples, groups, and themselves.

T1832 Principal of Sociology (2): The course helps students to understand that individual behavior occurs in a societal context of institutions, culture, groups and interactions that shapes what people do and think, and thus, the change in individual behaviors and social arrangements can improve the unfair situations for a social justice perspective.

T1891 Principal of Political Science (2): The purpose of this course is to provide an entry level knowledge of political science. It would introduce as well as analyze issues of democracy, government and political party systems, election affairs and human rights. It will thus strengthen students’ understanding of the theory and practice of politics.

T2882 The World of Finance and Economics in Daily Life (2): This course introduces basic economics and basic knowledge to enhance students’ abilities to get a comprehension and analysis of financial and economic problems. It will discuss important financial and economic events and related issues in class to strengthen students’ understanding of and thinking about the news of finance and economics in daily life.

Civil Society and Participation

M1179 Nonprofit Organization (2): The surge of the non-profit organization (NPO) has changed contemporary socio-political culture and public-private boundary drastically. This course will deal with the NPO’s institutional and organizational domain as well as its strategic action and management issues. These will enhance our conception of socio-political consciousness, public policy development and personal career planning.

T0805 Business and Law (2): The major objective of this course is to introduce students to the basic rights and obligations of an enterprise under the Civil Code and Company Act, regulation regimes for enterprises, corporate governance and management, and employee disputes. This course will also refer to real life cases to illustrate the practical application of laws and regulations.

T0806 Life and Law (2): In this course, we will introduce fundamental legal concepts using common legal problems in our daily lives. Based on categories used in the legal arena, this course will be divided into the following subsections:
1. Public law: topics include administrative organizations and human rights in constitutional law.
2. Civil law: in this section, the topics we will cover range from buying a coke to consumer protection.
3. Penal law: topics will include criminal behavior, prosecutors, court acts.
   During the course, students will be divided into groups. Each group will be responsible for three
   40-minute and 15-pages summary reports.

**T0808 Democratic Politics (2):** This course provides a comprehensive introduction to democratic politics. It covers the classic topics: concepts of politics, definitions of democracy, models of democracy, democracy and globalization, and democracy and its critiques. This course also examines a number of contemporary issues as well as future prospects of democratic politics.

**T0809 Civil Society (2):** This course introduces basic concepts of civil society and general rights and obligations of citizens. It also discusses how civil society helps advance social justice, accumulate social capital, strengthen democracy, and increase our capacity to deal with crisis and to fight against climate change. Finally, the course discusses how the development of social media affects the civil society.

**T0811 Civil Participation (2):** This course will introduce various theories of public participation ranging from classic political thought to contemporary political science. Some approaches to participation in political practice will also be explored in the course. The teacher and students will discuss real cases of civil participation in modern policy that they have encountered abroad or in Taiwan.

**T2207 Constitutional Law and Human Rights (2):** This course discusses the defense of human rights based on the Constitution of the Republic of China, including previews of real life cases in Taiwan.

**T2211 Information and Laws (2):** This course starts with the role of law in the digital era and introduces the legal system in the field of information technology. It covers Internet IPR laws, telecommunications laws, electronic signature laws, computer-processed personal data protection laws, laws for consumer protection in electronic commerce, laws for cybercrime, etc.

**T2610 Intellectual Property Rights and Law (2):** This course introduces the impact brought about by the advancement of technology upon the legal system and how the system can be adjusted to resolve the issues emerging from the interaction between technology and law.

**M2301 Introduction to Social Enterprise (2):** Social enterprise is a rapidly developing field in which entrepreneurs are using business methods to tackle social problems, improve communities, provide people access to employment and training, or help the environment. Whether operated by a non-profit organization or by a for-profit company, a social enterprise acts as a catalyst of change, identifying social problems and introducing solutions to them. Unlike NPOs, social enterprises are not designed to sustain themselves through donations. Social enterprises have a revenue source similar to private businesses and use that revenue to carry out their social mission. Through case study, lecture and student presentations this course will explore this emerging field. Students will learn what a social enterprise is and how it is the same as well as different from other types of business and NPOs.

**Scientific Inquiry**

**Information Education**

**E3527 Introduction to Computer Science and Its Applications (2):** This is a fundamental course for computer science, which will help students understand how to apply such techniques to improve daily work and solve basic problems. The course will include introduction to Windows operations, Internet applications, Office Word and PowerPoint and basic multimedia tools.

**E3528 Network and Information Technology (2):** In this course, students will learn not only fundamental knowledge of network and information technology, but also the applications and their impact on our lives and technology. We will cover the following topics: WWW, Web commerce,
impact of network on human life, basic principles of networks and communications, wireless cellular and data networks, RFID, sensor networks, Internet of Things (IoT), smart mobile devices, cloud computing, and the future of the Internet.

E3529 Microsoft Office Specialist Certification (2): This course introduces the skills of the Microsoft Office including Word, Excel, PowerPoint. The related training forms the basis for Microsoft Office Specialist Certification.

E3530 Application of Network and Cloud Computing (2): This course will help students understand many resources available in Cloud Computing, while training students to enhance efficacy of daily work and learning via actual practice.

E3531 Introduction to Multimedia (2): This course will help students build a solid understanding of multimedia technologies and tools, while inspiring students to further explore various aspects and applications of multimedia as well.

E1034 Introduction to Computers (2): This course is designed for freshmen, not only to enhance their computer knowledge, including programming, network management, network communications, multimedia, video graphics and others, but also to improve their abilities for obtaining desired information from the Internet. At the same time, related topics, like e-commerce, computer virus and information security, are introduced such that students will have sufficient skills for further investigating and learning more advanced techniques or applications. Finally, students can apply those abilities and skills to their daily life.

T0205 Web-Based Programming (2): The goal of this course is for students to understand web development environments, learn basic web program languages (php, html and CSS), and write interactive web applications.

E3742 iOS Programming Development (2): This course introduces iOS programming development technique, and the course will include environment introduction, Swift programming language, graphic control, positioning technique, camera control technique, and multi-thread programming technique. Students will learn iOS based mobile device development technology and complete a final project.

Global Technological Revolution

S0920 Earth’s Ecosystems and Environment (2/2): This course introduces the essential issues related to the ecosystems and environments on the Earth.

E2523 Biotechnology of the Future (2/2): The course presents an introduction to the historical background and general aspects of the global technology revolution. The potential impact and influence of a variety of technologies on the future will be discussed. The points of our discussion include energy resources and environment, especially, the future of biotechnology.


S0923 Electronics and Computer Technology (2/2): This course is for students to study science and technology and to increase their basic knowledge and understanding of science and technology. Also the rapid development of civilization that deteriorates the ecological environment and resource scarcity will be treated so that students can get a deeper understanding and care for this earth we are living on.
S0924 Marine Technology (2/2): Taiwan is surrounded by the ocean and sea, and so this course introduces the fundamentals of marine technology. It includes the topics of ocean environment, fluidic machinery, underwater technology, power net, ocean engineering, green ships, offshore wind power and the related innovative inventions.

S0925 Sustainable Development of Technology (2/2): This course will start from introducing the conception of sustainable development, and then be followed by exploring the direction of sustainable technologies in the future, through discussing the sustainable environment, sustainable economics and sustainable society.

S0926 Planning of an Intelligent Living Style in a Green Building Environment (2/2): This course presents an introduction to the history and future prospects of the quantum revolution, computer revolution, biochemistry revolution, as well as knowledge of space, time and universe. It also discusses their potential impacts on the environment. Topics for discussion include energy problems, information technology, micro-system technology and nano-technology in relation to our daily life in the future.

S0927 Evolution of Technologies (2/2): Three scientific revolutions have changed human civilization from the age of discovery to the age of mastery. The increase of our capability of modifying nature inevitably gives much more responsibility to this generation. It is urgently needed to start the discussion of various important issues such as energy sources, genetic technologies, and information technologies. In this course, we intend to provide a wide coverage of background knowledge regarding all these crucial subjects and will lead students to participate actively in in-class discussions. Students are expected to develop visions for the future after completing this course.

S0928 Global Robot Industry Trend Analysis and Practicum (2/2): This course gives an introduction to the current sciences and technologies for college students. This course is to raise students' knowledge bases in order to help students face the rapid change of our world.

E3628 History of Machines (2/2): This course aims to introduce the evolution of machines by ways of addressing the autobio of important inventors. Not only is it hoped that the students taking this course will change their negative impressions of science and tech, but it also is expected it will inspire their interest and motivation accordingly. Every student is requested to give a term-report at the final of the semester as the feedback to this course.

Natural Sciences

S0353 Living Logic (2): This course covers principles of deduction and induction, the relations between proof and logic, and reflections on the process of thought.

S0358 Physics and Living (2): The background about the physical mechanism in the fields of daily life and modern production will be introduced.

S0362 Exploring the Universe (2): This course presents an introduction to the solar system, the stars and galaxies, and the universe as a whole, including a brief account of the major advances in astronomy.

S0368 Chemistry and Life: Chemistry, the Environment and Society (2): This course centers on the local environmental issues and discusses related social problems as well as proposes possible solutions.

S0369 Chemistry and Life: Chemistry, Medicine and Society (2): This course introduces the basic chemistry concepts related to medicine and discusses significant social events related to both medicine and chemistry. Topics include basic drug chemistry, mind chemistry, vitamin chemistry, love chemistry, cancer chemistry, as well as the chemistry of traditional medicine.

S0377 Life Sciences: The Subtlety of the Human Body (2): This course covers the following topics: the body plan, the world inside the womb, growth and change, nimble limbs, cold and warm, the
confusing brain, heart and vessels, breathing, blood as the spring of life, viewing these processes through our own body, and the body’s defense system.

**S0690 Life Sciences: Gene Technology and Health (2):** This course is an introduction of the recent progress in DNA, genes, modern biotechnology, and general health care.

**S0727 Light, Photography and Vision (2):** This course offers an introduction to the basic properties of light, photography, holography, eyes and vision, and optical instruments.

**S0738 Chemistry in Daily Life (2):** This course explores the general principles of the chemistry we encounter in our daily life, such as in foods, medicine, the environment, materials, electronics, detergents, plastics, and natural and synthetic fibers.

**S0747 A Tour of the Wonder That Is Mathematics (2):** This course deals with many interesting aspects of mathematics, such as mathematical games, puzzles, as well as popular mathematical myths. The course also describes the relevance of mathematics to our daily life. By presenting the life stories of famous mathematicians, this course also offers an overview of the development of mathematics.

**S0748 The Way Science Works (2):** Using easy-to-understand stories and pictures, this course explains to students the science principles and mechanism behind the technologies and products used everyday. This course is most relevant to "How Things Work" types of knowledge.

**S0749 The Semiconductor in Living (2):** The lecture will introduce the characters of the semiconductor, and its application: field effect transistors, optoelectronics and logical elements. This lecture is for students who are not studying in science or engineering departments.

**S0751 Life Sciences: The Era of DNA Technology (2):** This course is to introduce the recent developments in DNA-related technology. It also discusses the impact of such progress on life sciences, medicine, and society from legal and moral perspectives.

**T2166 A Voyage to Science (2):** What is science? What does science mean to us? This course offers an opportunity to examine the path of science and to search for the true meaning of a scientific civilization.

**T2167 Chemistry and Life: Chemistry, Food and Society (2):** This course introduces the basic chemistry concepts regarding food and discusses social events related to food and chemistry. Topics include basic nutrition molecules, vitamins, cancerous foods, soft drinks, wine, healthy food, gene food, and so on.

**T2973 Statistics in Daily Life (2):** This course will introduce to the phenomenon or problems that are related to statistics or probability. The necessary analyzing software and knowledge of mathematics will be taught, too.
COLLEGE OF LIBERAL ARTS
COLLEGE OF LIBERAL ARTS

Dean: Chen-Jung Lin (林呈蓉)

Brief History
The College of Liberal Arts is the oldest academic division in Tamkang University. Founded in 1958, the College evolved from the Department of Chinese Literature (established in 1950) and now consists of five departments: the departments of Chinese Literature, History, Information and Library Science, Mass Communication, and Information and Communication. All of these are divided into two academic traditions: the humanities and the social sciences. The College incorporates an academic environment blending science and humanities.

Motto and Goals
The major feature of the College of Liberal Arts is its “dual core” focus, integrating social science knowledge with the humanities. This foundation has made for a unique learning environment, characterized by the thinking of “oriental perspectives, global vision, international connections, creative innovation.” The competitive strength of the College of Liberal Arts lies in its diverse range of quality courses, which include Creative Sinology, Cultural Vision, Innovative Publishing, Mass Media, and Digital Marketing.

Future Development
At the TKU College of Liberal Arts, we are not only helping students develop a deep understanding of the subject areas, but also nurturing a wide range of skills necessary for students’ future careers, such as observation skills and practical abilities in real social contexts. The interdisciplinary program of Cultural and Creative Industries provides our students with a wider scope of knowledge and core capabilities, and allows them to set their vision on a career of the cultural and creative industries. It can’t be ignored that the College of Liberal Arts has become an important educational institution of Tamkang University.

Course Descriptions
A1593 Sinology Culture and Originality (0/2): This Sinology course focuses on Chinese culture in a diverse range of fields. It differs from traditional Sinology courses in that it demonstrates the originality and diversity of Chinese culture.

A1907 Introduction to Cultural and Creative Industries (2/2): This course applies a literacy approach to the Creative and Cultural Industry and explores its impact on product shifting and “value-addedness.”

A2206 History and Life (0/2): This course aims to offer students the opportunity to enhance their spiritual lives, to further their ascension to a higher realm, not to just collect various historians’ personal knowledge about historical figures and events. To introduce to my students a very important topic for education: “Humankind’s search for happiness is surely not a matter of head, but one of heart.” And the history of the whole world verifies this statement clearly and completely. Moreover, this course makes students aware of the dangers of our past ways of life, and where the whole past is leading us—to endless crisis. And this understanding of the roots of the various kinds of problems we face convinces my students to drop the past and to accept their precious challenge of creating their own golden future.

A2353 Creative Digital Genes (2/0): This course aims to explore creative ways of thinking and elements of creativity and digital thinking by analyzing creative artwork and thereby inspiring students to explore their own internal creativity.

A2416 Storytelling and Creativity (2/0): This course introduces different kinds of material relevant to storytelling. Through appreciation and analysis, group discussion, and interactive teaching activities, students develop a talent for storytelling and broaden the way in which they think.

A2450 The Culture of Jade and Life Value (2/0): This course emphasizes the study of raw jade. In
this course, students will not only learn to appreciate ancient jade, but also learn about the sophisticated nature of jade culture. Finally, we will incorporate humanistic concerns into our real life.

A2530 Digital Arts and Interface Design (0/2): This course covers the history, tendency, and technological development of digital arts. We will address the growth and relevance of performing arts, film, video, and digital media in the gallery world, and the various dialogues with popular and scientific culture in which all these new media have been involved.

A2557 Culture Brand Management and Global Marketing (0/2): This course focuses on two areas: the development of a cultural product or service into a world-class brand and the management of global marketing. These topics are explored by introducing relevant theories and case studies.

A2559 Story-telling Project (0/2): This course is designed to provide students with guidelines to explore their imaginative potential to create a story, to build up the structure of a drama, to create potentially interesting subjects for a story, and to develop a story outline.

A2560 Knowledge Management and Technology Application (0/2): This course allows students to gain familiarity with the business aspects of the cultural and creative industries. During the course, students undertake a practical internship and explore the potential applications of knowledge management and creative information technology in the cultural and creative industries.

A2569 Seminar on Global Cultural and Creative Industry (0/2): This course invites guest speakers from different areas of the cultural and creative industries to talk on special topics. It also features lectures by TKU instructors and extended discussions on various issues.

A2585 Visual Narrative Project (2/0): This course focuses on the use of computer-based tools to tell stories. Most digital stories focus on a specific topic and contain a clear message. Digital stories generally use a mixture of computer-based images, text, recording, audio narration, video clips, music and sound effects. The topics that appear in digital storytelling range from personal experiences to the recounting of historical events, from exploring life in one's own community to the search of life in other corners of the universe and everything in between.

A2586 Internship on Global Cultural and Creative Industries (2/0): This course offers internships for students to explore potential business models and the difficulties and opportunities associated with the cultural and creative industries in Taiwan and in the global market.

A2588 Digital Archives of Arts and Literature (0/2): This course aims to develop students’ ability to produce and appreciate digital archives in the field of arts and literature. We will introduce the processes and techniques needed to digitalize art and literary works and discuss the application of such digital content. This course will employ case studies and real classroom practice.

A2589 Knowledge Management Strategy and Innovation (2/0): This course offers students an introduction to knowledge management strategies and technology innovation services. It will familiarize students with the meaning of KM and how to use KM for technology innovation service in an organization.

A2590 Special Project on Cultural and Creative Industries (2/0): This course aims to help students design projects on cultural and creative industries. Students will make use of their knowledge of innovation and entrepreneurship to develop a proposal.

A2591 Project on Global Marketing in the Culture and Creative Industries (2/0): Focusing on analysis of market trends and production and sales strategies, this course will guide students to explore critical factors in bringing new and paradigm shifting products to the market.

A2779 Animation in Cultural & Creative Industries (0/2): This course provides a detailed overview of animation in the cultural & creative industry. It discusses the current situation in Taiwan, including factors that have contributed to the success of the industry in Taiwan and in other major computer animation countries to understand the importance of animation, and try to learn to use it in the practice of the cultural and creative industries.
A2780  **Book Editing and Publishing (0/2):** This course is designed to familiarize students with the whole processes of publishing, including editing, printing, issuing, as well as a comprehensive knowledge of publishing. The main subjects of the course, including the procedure and the details of every step of publishing—creative initiation, planning, editing, printing, pricing, distribution, copyright trading, are organized to help students understand the professions and enterprises of publishing.

A2781  **Practical Publishing (2/0):** This course focuses on the development of practical publishing and gives students the best practical knowledge about book publishing, editing, and marketing. All knowledge came from the real book publishing world.
DEPARTMENT OF CHINESE LITERATURE

Degrees Offered: B.A., M.A., Ph.D.

Chairman: Der-liang Chou (周德良)

The Department
The Department of Chinese Literature seeks to promote Chinese culture by combining classicism and modernism. It believes in the nurturing spirit of the humanities and promotes cultural equality through an in-depth view of traditional Chinese culture, and inquiries into the relationship between traditional Chinese learning and contemporary culture.

The Department also offers an evening bachelor’s program for those who are unable to pursue their studies during the daytime.

Founded in 1988 (M.A.) and 1999 (Ph.D.), The Graduate Institute of Chinese Literature combines Chinese literature and aesthetics, traditional society and culture. The M.A. and Ph.D. degrees require two or more years of intensive study and research in the field of Chinese literature, arts, philosophy, and culture.

Faculty

Honorary Professors
Fu-Hsi-jen (傅錫壬) ; Ho-Chim-lan (何金蘭) ; Chen-Ching-huang (陳慶煌) ; Tsui-Cheng-tsong (崔成宗) ; Chou-Yen-wen (周彥文) ; Chen-Shih-hua (陳仕華)

Specially Appointed Professors
Ben-hang Chang (張炳煌)

Professors
Wei-min Chao (趙衛民) ; Po-yuan Kao (高柏園) ; Kuo-ping Lu (盧國屏)

Associate Professors
Ming-hao Ma (馬銘浩) ; Shan-pei Yin (殷善培) ; Wei-ping Shu (許維萍) ; Ta-tao Chen (陳大道) ; Der-liang Chou (周德良) ; Lee-ching Huang (黃麗卿) ; Wei-shu Lin (林偉淑) ; Wen-chien Huang (黃文倩)

Assistant Professors
Yu-fu Tseng (曾昱夫) ; Ru-chi Hou (侯如綺) ; Yi-nan Pu (普義南) ; Hui-Ru Li (李蕙如) ; Ya-chun Lo (羅雅純) ; Yi-chieh Liu (劉依潔) ; Tai-man Lin (林黛嫚) ; Tsung-Han Yang (楊宗翰) ; Min-chi Hsieh (謝旻琪)

Degree Requirements

1. Requirements for a B.A. in Chinese:
   Students must complete 128 course credits, including 88 credits of required courses, 20 credits of elective Chinese literature courses, and 20 credits of elective courses.

2. Requirements for a Master’s degree in Chinese:
   Master’s students of the Department of Chinese Literature must complete their degree program within 2-4 years. During that period, they must take a minimum of 32 credits, excluding their thesis. Master’s students are not allowed to take more than 15 credits each semester, but need to be enrolled in at least one course per semester. Master’s students are required to take the course “Academic Research Methods.”

3. Requirements for a degree in Ph.D. in Chinese:
   Ph.D. students must complete their degree within 2-7 years. During that period, they must take at
least 18 credits (excluding their dissertation). Students are not allowed to take more than 15 credits per semester but need to be enrolled in at least one course each semester. The Topic of Chinese Academic History is a required course.

Course Descriptions

**Undergraduate Courses**

A0104 History of Chinese Literature I (2/2): This course is designed to arouse students’ interest in Chinese literary works by exploring the history, characteristics, and styles of Chinese literature.

A0105 History of Chinese Literature II (2/2): This course provides an introduction to the interaction between literary development and socio-political factors in different periods of history and a study of the formation of literary styles and characteristics.

A0150 Chinese Paleography (2/2): This course focuses on the study of the structure of Chinese characters.

A0168 Introduction to Literature (2/2): This course introduces some basic concepts of literature, as well as Chinese and Western literary theory and criticism to develop students’ competence in appreciating and critiquing literary works.

A0294 Chinese Bibliography and Edition (2/2): In this course, students will study the Chinese version of the classical learning and science catalogues.

A0384 Children’s Literature (2/2): This course offers an introduction to renowned authors and works in the area of contemporary children’s literature.

A0562 Hsun Tsu (2/0): This course can be divided into three sections: (1) Understanding the doctrines and historical evaluations of Xun Zi. (2) An analysis of Xun Zi’s famous interpretation of certain texts and ideas (3) Modern interpretations of “Xun Zi”—reviews and reflections.

A0563 Chinese Semantics (2/2): This course offers an introduction to exegetical methods, regulations, semantic analysis, and classical annotation style.

A0589 Introduction to Chinese (2/2): This course offers an introduction to Chinese culture and literature.

A0715 Readings in Chinese Poetry (2/2): Through analysis of ancient Chinese poetry and classical poetry, students will be able to grasp the spirit of classical poetry and its cultural landscape and thus gain a basic understanding of classical Chinese poetry.

A0828 Selected Readings in Chinese Literature (I) (2/2): Based on the dignified characteristics of the self-description of “Le Zui” and the hardship of trained procedures, the superstition of fortune-telling and the fear of death were broken, and thus developed the philosophy of life and death.

A0829 Selected Readings in Chinese Literature (II) (2/2): This course offers an introduction to Pian Wen in the Six Dynasties and an in-depth analysis of Chao Ming’s Literary Anthology and its influence on the history of literature.

A0852 Chinese Phonology (2/2): Through the phonology of the media, students will be able to recognize and understand the phonological structure of language, phonology books, audio systems, to understand the link between dialects by using phonology, and to appreciate the beauty of Chinese literature.

A0991 History of Chinese Philosophy I (2/2): This course surveys the origin and development of Chinese philosophy, tracing the spirit and value of Chinese culture.

A0992 History of Chinese Philosophy II (2/2): This course surveys the origin and development of
Chinese philosophy and traces the spirit and value of Chinese culture. It is a continuation of “History of Chinese Philosophy I.”

A1051 Special Topics--Poems (2/2): This course is the general term of the curriculum, the content can be changed year by year, so that students have more opportunities to take elective professional courses. The course of this semester is “Yue fu （樂府）”, that is Chinese poetry in a folk song style. However, in anytime, Yue fu always are the lively and lovely songs circulated among the people. This semester includes 18 subjects to appreciate and analyze the poems’ character and writing skill.

A1227 Chinese Editing and Interviewing (2/2): Training of critical thinking and news writing is practiced in this course, so as to help students develop concepts of interviewing and news editing.

A1376 Expression in Spoken and Written Chinese (3/0): This course is designed to enhance students’ ability to speak and write Chinese by analyzing theories and case studies, and taking part in exercises and discussions.

A1487 Composition (2/0): This course aims to teach training in creativity, words, text, structure, composition.

A1638 Hsi Chü—Selections (2/2): This course aims to guide students in studying various works of classical Chinese drama.

A1783 Folk Culture and Chinese Literature (2/2): This course will enable students to understand the relevance of US folklore philology, and thus lead to an interest in folklore and ancient and modern biography for Literature.

A2021 Modern Poems and Creation (2/2): This course focuses on the interpretation and comprehension of modern poems and poetry writing.

A2022 Grammar and Rhetoric (2/2): This course provides analyses of semantics, syntax, and common idioms.

A2142 The Study of Literature and Art Editing (2/0): Actual editing and publishing applications of various fields will lead students to understand the science and practicality of being a literary editor.

A2333 A Subject’s Program and Interview (0/2): This course introduces to students planning, copy writing theory and writing as tactics and procedures.

A2458 The Selected Readings of English Sinology Writings (2/0): This course introduces students to some Chinese writings translated into English. They are, chronologically, The Analects of Confucius, Tang poetry, Tang and the Ming Chinese short stories, as well as articles concerning modern literature in the May-fourth period.

A2516 Introduction to Mandarin Chinese (0/2): This course is an introduction to some important theories and techniques in teaching Chinese as a second language.

A2517 Modern Chinese Literature and Thought (2/2): This course explores the contents, features and trends of art and literature and explains the relationship between literature and human lives.

A2518 Introduction to Chinese Drama (2/2): The goals of this course are to introduce students to Chinese drama, including its history, art forms, etc. in order to obtain a basic knowledge about Chinese drama.

A2535 Reading and Writing in Chinese Poetry (2/2): This course will focus on music literature, the state of mind of literature, research on Ci characters, scenes, emotional types of change, and the general characteristics of mood.

A2625 Poetry, Calligraphy, Painting and Cultural Creative Industry (0/2): This course describes the relevance of poetry and painting to contemporary times and how to help influence fashion culture. It combines creative content with industry and traditional arts to equip students with extensive
knowledge in the area of the arts.

A2626 Introduction to Creative Sinology Industry (0/2): This course introduces students to poetry and painting as relevant to current life and their potential to become the art of living of the times, and open up a new fashion culture. This course focuses on linking creative products of traditional culture and arts with industry, and thereby allowing for further social development.

A2791 English for Sinology (2/2): The course instructs students in sinology by reading English sources.

A2792 Applied Mandarin Writing (2/0): The course is an introductory description of prose, plays, publishing and other fields; practical exercises will promote the students’ writing skill.

A2794 The Chinese Mythology (0/2): The concept of “myth” was introduced by Chinese scholars studying abroad in Japan and has been studied for more than 100 years with increasingly thorough data on mythical texts. This course will cultivate students’ ancient social and cultural imagination and creativity.

A2895 Selected Readings of the Chinese Classical Novel (2/2): The course will (1) cultivate the students’ ability to appreciate and criticize classic novels, (2) cultivate the students' understanding of the history of Chinese novels, and (3) apply the classic modern interpretation to let the classics spread and set our existence and emotions.

A3390 Basic Calligraphy (1/1): This course will focus on calligraphy teaching and writing exercises. In this semester students will review and strengthen official script of the Han Bei and the Han Dynasty; and practice line, cursive, and relevant information.

A3391 Advanced Calligraphy (2/0): This course takes calligraphy fundamentals as a cornerstone and explores further various types of calligraphy. This course uses textbooks dealing with traditional calligraphy theory to enable students to associate theory with practice in their creation of contemporary calligraphy.

A3394 Introduction to Modern Popular Novels (2/2): The main purpose of this course is to introduce students to basic knowledge regarding popular novels in the modern era and the Qing Dynasty. This basic knowledge includes an examination of the definition, history, and works of the era.

A3513 Szu Shu (2/2): Through this course, students will learn about basic Confucian moral principles.

A6036 Modern Drama (2/0): The course aims to explore the development of modern drama, and introduce representative troupe works.

Master's Program

A0444 Research Methods (2/2): This course offers a study of the significance and influence of language analysis in contemporary philosophy; it offers a guide to academic research by providing clear concepts and logical arguments.

A2711 Special Topics on Chinese Calligraphy Art (2/0): This course combines calligraphy and literature as the content of the study and the most exquisite literary Lian Ju; these written calligraphy couplets are from the Ming and Qing dynasties by famous calligraphers.

A3041 Topics on Printmaking Literature (2/0): This course is based on traditional Chinese prints, discusses the significance and value of the literature, and then develops the thinking and new fields of cross-domain research.

A3042 Topics on Chinese Philosophy Study--Pre-Qin Confucianism (2/0): This course in to introduce the thought of Neo-Confucianism, especially focus on Mou Zōngsān, Tang Junyi, Xu Fuguan, Fang Dongmei, Lao Siguiding. On the other hand, metaphysics, theory of human nature, and ethics are the reference points in interpretation of theoretical exposition of Neo-Confucianism. In the end,
analysis and a re-definition will be provided.

A3044 Topics on the Classic Literature of Confucius Canon Study (2/0): The purpose of this course is to enable the practitioners to change the history of the classics and their changes. The outline through the teacher's lecture and the mutual discussion between the students will then promote an understanding of the various questions in the history of the study of the classics, and will further cultivate the ability to solve problems.

A3046 Topics on Sociological Trends in Literature (2/0): This course will delve into many of the theories that have evolved, the social systems closely related to literary facts, geography, climate, politics, nationality, science, production, communication and consumption, and the networks that have flourished since the twenty-first century. It will explore literary phenomenon and through the occurrence of learning will explore the original roots of literary texts.

A3049 Topics on the Chinese Classical Short Story (2/0): This course will (1) cultivate students' ability to appreciate classical classic short stories and their ability to criticize them, (2) cultivate students' understanding of the history of Chinese short stores, and (3) apply the classic modern interpretation to let the classics spread and set our existence and emotions.

A3051 Thanatology of Modern/Contemporary Chinese Literature (2/0): This course is to introduce the important thanatology of the Modern Chinese literature, and though their equality and diversity to trace the origin, tradition and variation.

Ph.D. Program

A2413 Selected Topics on Chinese Learning (2/2): This course focuses on the development of traditional Chinese academic trends, ranging from public opinion and rhetoric to textual interpretation.

A3024 Study in Chinese Mythology (I) (Ⅱ) (2/2): This course presents the thought and concept constructed by Chinese literature. In addition to the establishment and interpretation of myths and legends, the content consists of an analysis of the relationship between mythology and literature (poetry, fiction, drama, film), history, folklore and folk arts.

A3026 Topics on Critical Poems and Poetics (2/0): This course focuses on the meaning, function, value, and the methods of Selected Topics of Critical Poems.

A3028 Topics on the Contemporary Literary Trends (I) (Ⅱ) (2/2): This course discusses several important concepts through the trends of postmodern, cultural studies and contemporary literary trends, related to poetry, and the development of two types of styles in the novel in the past 100 years, plus possible future development trends. Facing the 21st century Comprehensive analysis and discussion of various literary trends and the ever-changing theoretical ideas.

A3030 The Thought of Lao Tzu's Daodejing & Its Conception of Aesthetics (2/0): The main purpose of this course is to solve the vulgar defend between the four new unearthed documents and the Wang Bi's Lao Tzu, to give the system annotation of Lao Tzu's thought by the originality, and to explain the deep meaning of Lao Tzu's aesthetics according to the approach of experiential theory.

A3032 Topics on Chinese Ancient Texts and Culture—Collection of Book & Bibliophile (2/0): There are many ancient Chinese classics, and the ancient books that were circulated and stored in the past. Therefore, the cultural connotation of its collection is very rich. This course aims to sort out the consciousness of the book collectors and the corresponding catalogues and editions in the life of the book collection. Further it will discuss the study of the book, the collation, and the collection, and the evolution and change of the academy and classics.

A3034 Topics of Chinese Characteristics and Cultural Model (2/0): The core lecture material consists of Interactive research between language and society. The focus for this term is: "Correspondence between the characteristics of Chinese linguistics and cultural pattern". We will assess the active relationship between language and society from the vivid cultural and social patterns in everyday life.
DEPARTMENT OF HISTORY

Degrees Offered: B.A., M.A.

Chairman: Shang-wen Kao (高上雯)

The Department
The Department of History was founded in 1966 for the purpose of training historians in cultivating the wide realm of historiography. At present, the department has two professors, five associate professors and four assistant professors. A special feature of this department is a chair for the expertise in historical studies, carrying out the prospect of both classroom education and fieldwork. In addition to inviting specialists and scholars to give lectures, students and professors also make field trips to famous local sites to conduct on-site analyses. Established in 1998, the master’s program aims to train students’ ability in conducting historical research, especially on the relationships between China and foreign countries and the history of Taiwan.

Faculty

Honorary Professors
Yun-chih Lo (羅運治); Tsung-hsien Chou (周宗賢)

Professors
Jiann-chen Huang (黃建淳); Chen-jung Lin (林呈蓉); Tzeng-chyuan Liou (劉增泉); Huang-ta Lin (林煌達)

Associate Professors
Yueh Wang (王樾); Ming-yung Wu (吳明勇); Shang-wen Kao (高上雯); Chia-chi Lin (林嘉琪)

Assistant Professors
Chi-Lin Lee (李其霖); Yi-Ching Ku (古怡青)

Degree Requirements

1. Requirements for a Bachelor’s degree in History:
   A student must complete 128 credits of courses, including 84 credits of required courses and 44 credits of elective history courses.

Required courses:
A. First year:

B. Second year:
   Historical Methodology, Chinese Historiography, History of Japan, Medieval European History, Western Historiography, History of The Chin and Han Dynasties, Twentieth Century World History, Modern Japanese History, The Development of Science and Technology in Taiwan, Social and Economical History of Liao, West Xia and Jin Dynasties, Economic History of China, Historical Demography and Application, Tombs and Cultural Relics of Archaeology In China, etc.

C. Third year:
D. Fourth year:
Writings of Genealogical Records, History of Modern China, History of Chinese Art, History of the Ming Dynasty, History of South East Asia, Digital History Data, History of Contemporary China, Identification and Collection of Ancient Chinese Jades, etc.

2. Requirements for a Master’s degree:
A student must complete 32 credits, including 28 credits of required courses and 4 credits of seminar. Students are also required to submit a master’s thesis completed under the supervision of a faculty member, and pass an oral examination.

Required courses:
Historical Research: Theory and Practice, Study on Chinese Jade History, Analysis of Historical Taiwanese Materials, Study on Chinese Modern Thoughts, Topics on Taiwan Developmental History, etc.

Course Descriptions

Undergraduate Courses

General Courses

A0281 Historical Methodology (2/2): This course is designed especially for advanced scholarship in history. Stress is placed on practical exercises; the purposes, materials and techniques of historical scholarship; and theory, practice and criticism of historical research methods.

A0282 Introduction to Historiography (2/2): This course offers an introduction to the great historians of the world. Classroom activities include studying and seminar discussion of selected historical documents dealing with major events and trends in historiography.

A1139 History of Taiwan (2/2): Fieldwork and seminar of Taiwan history studies are central to this course. This is an advanced course that continues the initial course “Introduction to Taiwan History” and will discuss related topics in more depth.

A1212 World History (3/3): This course surveys Western civilization from antiquity to the modern Period.

A2537 Introduction to Digitization of History Data (0/2): To enable students to experience the work of history data digitalization, and to understand the role of cultural and creative industries.

A2538 Practicum of Digitization of History Data (2/0): The implementation of history data digitalization project, to enable students to experience the work of history data digitalization, and to understand the role of cultural and creative industries.

A2808 Scholarly Publish & Historical Writings (2/0): The course trains students how to understand scholarly publications and how to write historical books. It teaches them to classify the annual style, legend style, report style, and biography style.

T0031 General History of China (3/3): This course offers a survey of Chinese civilization beginning from antiquity to the modern Period.

History of China

A0121 History of Modern China (2/2): This course offers an overview of political, economic, social and intellectual history of China from 1800 to 1911. Processes of modernization and revolution and relationship between them will also be discussed.

A0371 History of the Sung Dynasty (2/2): This course offers an overview of political and cultural history of China from 960 A.D. to 1279 A.D.

A0387 History of the Ching Dynasty (2/2): This course discusses major forces and trends in the
history of the Qing Dynasty.

**A0395 History of the Ming Dynasty (2/2):** The development of Chinese political, cultural, social and urban history in the Ming Dynasty is discussed in this course.

**A0831 History of Liao, Chin & Yuan Dynasties (2/2):** This course gives an overview of political, economic, social, and cultural history of China from 916 A.D. to 1368 A.D.

**A2227 Social and Economic History of Liao, West Xia and Jin Dynasty (2/2):** This course focuses on the social and economic histories of Liao, West Xia and the Jin Dynasty.

**A2303 History of the Renaissance (2/2):** In this course, students will study the origin and development of famous writers and painters in the Renaissance age.

**A2742 History of Pre-Chin, Chin and Han Dynasty (3/3):** This course introduces Chinese history before 221 B.C., which includes the archeological Stone Age, mythological Three Sovereigns and Five Emperors and the historical development of the Dynasties of Xia, Shang, Zhou.

**A2743 History of the Wei-Jin to Sui-Tang Dynasties (3/3):** History of the Six Dynasties is the interface between the Qin-Han dynasties and the Sui-Tang dynasties. This curriculum is composed of the Sui Dynasty, the Tang Dynasty, and the Five Dynasties and Ten Countries period history events.

**A2745 History of Sung and Yuan Dynasties (3/3):** This course follows the admonition by Yan Fu of the late Ching Dynasty who claimed that the Four Histories should be read as literature. Much of what we today call Chinese was created during the Song and Yuan Dynasties. Thus, the course considers the development of Song and Yuan dynasty and relates these to the great transformation of Chinese politics, economy, society and culture.

**A2746 History of Liao, West Xia and Jin (3/3):** This course is concerned with the rise and fall of the Kitan, Tangut, and Jurchen clans during the 10th through 13th centuries. It analyzes each clan’s development and evolution. The course also explains the Liao, Xixia, and Jin Dynasties in their attempt to preserve the character of their own clan. These clans created new political, military, social, economic, and cultural developments. Finally, the course analyzes the connections and influences of those dynasties with the developments of Chinese history.

**T0030 History of Contemporary China (2/2):** This course gives an overview of the political, economic, social, and intellectual history of China from 1911 to the present.

**A0313 The Ancient Western World (2/2):** This course focuses on the history of the origins of Western civilization to the fall of Rome.

**A0314 Medieval European History (2/2):** This course gives an overview of the political, economic, social, and intellectual history of the Middle Ages.

**A0325 Modern European History (2/2):** This course gives an overview of political, economic, social and intellectual history from the Peace of Westphalia to the fall of Napoleon.

**A0326 Early Modern European History (2/2):** This course deals with the political, cultural, economic, and social developments in the Western world from the 16th to 18th centuries. It describes how the modern age was shaped.

**A1213 Twentieth Century World History (2/2):** This course gives an overview of political, economic, social, and intellectual history from the fall of Napoleon to the present.

**A2502 History of Modern European Culture (2/2):** This course offers an overview of the economic, social, and culture history of modern Europe.

**Special Topics on History**

**A0123 Intellectual History of Modern China (2/2):** This course offers a close analysis of people,
ideas, and intellectual development of China from 1844 A.D. to 1911 A.D.

A0132 History of Chinese Art (2/2): In this course, students will be engaged in historical analyses of selected works of painting, sculpture, temples, majestic palaces from antiquity to the present.

A0287 Seminar on Taiwan History (2/2): Selected topics (political, economic, social and intellectual history of Taiwan from the 16th to the 21st century) will be discussed in this course.

A0335 History of Western Fine Arts (2/2): This course offers a historical survey of selected works of painting, sculpture, and architecture from antiquity to the present, and an introduction to the major artistic movements in Western art.

A1240 History of Modern Japan (2/2): This course offers a general survey of the people, ideas and intellectual forces of 20th-century Japan.

A1267 History of Early Modern Taiwan (2/2): This course gives an overview of political, economic, social and intellectual history of Taiwan from 1895 to 1945.

A1268 Social and Cultural History of Japan (2/2): This course offers a survey of social and cultural history of Japan from the earliest times to the present.

A1379 History of Japanese Diplomacy (2/2): In this course, students will study the history of diplomacy of Japan, and discuss its importance in Japan as well as in the world, especially in East Asia.

A1435 History of Chinese Society (2/2): This course focuses on how Chinese society was formed and shaped.

A1437 History of Chinese Political Systems (2/2): This course offers a close analysis of China’s bureaucracy transformation and how the government system works.

A1496 Women in Chinese History (2/2): This course studies the status of Chinese women in history and the oppression of patriarchy inflicted upon them.

A2193 History of Frontier Culture in China (2/2): This course introduces the formation of frontier culture in China and discusses how it was developed.

A2501 The Development of Oceans in Taiwan (2/2): The current course introduces a collection of materials related to Taiwan’s Oceans and technology. Students will understand Taiwan’s Ocean and technology and then continue to expand on the interesting parts.

A2503 The Modern History of Taiwan (2/2): The course analyzes the basic structure of Modern Taiwan’s economy, culture, thoughts, literature, arts, social transition to explain how different modern cultures in Taiwan were formed.

A2592 Cultural Tourism and Socioeconomic Development in Taiwan (2/0): This course introduces topics relevant to cultural tourism and socioeconomic development in Taiwan. Students will understand the importance of cultural tourism and socioeconomic development in Taiwan.

A2641 The Guide of Local Culture and History in Taiwan (2/2): The purpose of this course is to help students understand local culture and history in Taiwan, and to advance their ability of organizing and interpreting local historical sources, therefore, increasing opportunities for them to gain related jobs.

A2697 The Industrial Development of Taiwan (2/2): This course discusses The Industrial Development of Taiwan. The course also analyzes the basic structure of Modern Taiwan’s economy, culture, thoughts, literature, arts, social transition to explain how different modern cultures in Taiwan were formed.

A2699 Taiwan Forestry History (2/2): This course discusses the study of Taiwan Forestry History. The course also analyzes the historical materials about Taiwan Forestry History, the basic structure of
Taiwan’s Forest economy, culture, thoughts, social transition to explain how different cultures in Taiwan Forestry were formed.

**A2700 Chinese Jade Culture and Ancient Fine Arts (0/2):** Through studying the culture connotations of the Chinese Jades, students will be capable of thinking about the historic key points in the artifacts, so that they could realize the significance and cultural value of Chinese Jades, and enhance their capability of appreciating and enjoying the cultural splendor of Chinese Jades.

**M0031 Economic History of China (2/2):** This course focuses on the origins of the Chinese economy, providing a historical analysis of economic change and growth from the earliest time. Emphasis is placed on the precondition and consequences of industrialization.

**A1496 Women in Chinese History (2/2):** Through appreciating and analyzing historical data, related researches, pictures and videos, this course investigates women issues in the historical context based on the main theme of “Gender”. On the one hand, we try to investigate the female image under traditional Confucianism and patriarchal society. On the other hand, we try to clarify female image under emerging feminism in the modern era.

**A1496 Historical Demography and Application (0/2):** The main purpose of this course is to provide students with historical demographic theories and examples of quantification. Furthermore, the course integrates social and economic development of local society with the geographic information system (GIS). In this course, we talk about population and family changes in Taiwan. Topics covered include birth, death, marriage and migration.

**Historiography**

**A0117 Chinese Historiography (2/2):** Students will be engaged in readings of the great historians of China from the earliest times to the beginning of the 20th century. This course also investigates how perception of the past has altered our present.

**A0118 Selected Texts from Chinese History (2/2):** This course focuses on topics and texts in Chinese history with various approaches adopted by distinguished historians.

**F0277 History of Japan (2/2):** The past and present history of Japan, from the 7th to the 21st century, will be discussed in this course.

**A2195 Overseas Chinese History in Southeast Asia (2/2):** The course analyzes and compares the politics, societies, economics, and culture construction of different regions in Southeast Asia. Students learn how to figure out the history of Southeast Asia and make comments with confidence about what kind of contribution and influence was, made by the overseas Chinese who were under multiple complex historic factors and environments of regions in Southeast Asia.

**A0321 Western Historiography (2/2):** Students will be engaged in readings of the great historians of the Western world, from the earliest time to the beginning of the 20th century. This course also investigates how perception of the past has altered our present times.

**A0322 Selected Texts from Western History (2/2):** This course focuses on writings and texts of Western history with various approaches adopted by different historians.

**A0398 History of Southeastern Asia (2/2):** This course focuses on the following topics: blending and modification of cultures, religions and people of island-and-mainland Southeast Asia, cultural contact and the growth of states and peoples.

**A0425 History of France (2/2):** This course focuses on the major forces and trends in the history of France from Western Roman Empire to the 5th Republic.

**A0466 History of Russia (2/2):** This course discusses origins and evolution of Russian people and the state, and foreign relations as they affect domestic policy from 862 to 1964.
A0478 **American History (2/2):** This course focuses on the major forces and trends in the history of the U.S. from the earliest times to the present.

A0518 **History of England (2/2):** This course focuses on the major forces and trends in the history of England from the early medieval time to the present.

A0830 **The Philosophy of History (2/2):** This course serves as an introduction to some of the main issues and problems in Western philosophy of history (including analytical approaches and speculative approaches).

A1432 **Selected Texts on Japanese History (2/2):** Students will be introduced to writings and texts on Japanese history, with various approaches adopted by distinguished historians.

### Master’s Program

A2833 **Historical Research and Discussion Topics (2/2):** Based on the theory of history, students will, through interdisciplinary studying, develop the capacity of independent research.

A2834 **Study on Chinese Historical Materials (2/0):** This course focuses on the history of China and interpretation of historical data used to study the origins, values, collection, identification and utilization of Chinese history historical methods, in order to facilitate those who want to delve further the study of Chinese history.

A2835 **Study of Taiwan Modern History (2/0):** This course discusses the study of modern Taiwan history. The course also analyses the historical materials about the area study of modern Taiwan history, the basic structure of Taiwan's economy, culture, thoughts, literature, arts, and social transition to explain how different cultures in Taiwan were formed.

A2836 **Historical Study of European Culture and Society (2/0):** In this course, we focus on the socio-cultural and economy in nineteenth and twentieth century Europe. Topics include the industrial revolution, important political, economic and social issues. The English journal articles and classic books are course materials; students are the main leader in the class to share what they learn and their comments.

A2837 **International Realizations of Taiwan History (2/0):** This course focuses on the relations between Formosa and abroad, through reading historical materials to get the concept of the international environment which Formosa faced during the 17th to 20th century.

A2838 **Study of Early Modern Chinese History (2/0):** The course introduces the developments of early modern Chinese society and culture. For example, mobility of social class, status of officials, maintenance of family, marriage and woman status, religion and folk belief, city structure and culture, medical and social welfare, lawsuits, etc., will all be touched upon. It’s an advanced course for more understanding and discussion.

A2875 **Decipherment of Formosan Historical Materials (2/0):** This course helps students effectively grasp and understand Formosan historical archives.

A2877 **A Study of Chinese Jade Culture (2/0):** This course looks at examples of jade and the history surrounding these Chinese artefacts. Through studying the culture associated with Chinese historical jade artefacts, students learn to think of and appreciate the history surrounding such precious objects.

A2878 **Studies of Chinese Ancient History (2/0):** This course introduces the research findings and achievements of the Pre-Qin, and discusses relevant academic topics.

A2880 **Studies in Regional History of Taiwan (2/0):** This course introduces the Regional History of Taiwan looking at past, present, and possible future. Contents include the Netherlands, Zheng Dynasty, Qing Dynasty, Japan, and the Republic of China.
A2881 Study of Taiwanese Social and Cultural History (0/2): This course discusses the study of Taiwan Social and Cultural history. The course also analyses the historical materials about the area study of Taiwan social and cultural history, the basic structure of Taiwan's economy, culture, thoughts, literature, arts, and social transition to explain how different cultural practices in Taiwan were formed.

A2882 The Study of Chinese Social and Cultural History (0/2): The course introduces the developments of Chinese society and culture, including such things as the mobility of social classes, status of officials, maintenance of family, marriage and woman status, religion and folk belief, city structure, health and social welfare, laws, etc.

A2883 A Comparative Study of Culture (0/2): This course emphasizes the use of empirical research to help students using theoretical frameworks to compare and contrast cultures, effectively grasping the similarities and differences among cultures.

A2884 The Study of American Social and Cultural History (0/2): This class provides a highly condensed and simplified survey of major historical interactions between legal, economic, and political affairs and social phenomena. The view expressed is that culture is highly dependent on the religion, laws, technology, and economic prosperity that enable and constrain the formation of culture. As these change, so too does American culture change.
DEPARTMENT OF INFORMATION AND LIBRARY SCIENCE

Degrees Offered: B.A., M.A.

Chairman: Chung-jang Ouyang (歐陽崇榮)

The Department
The Department of Information and Library Science offers an undergraduate and a graduate program. The programs prepare students for careers in government, business, schools, libraries, information centers, and research institutions through training in the techniques and applications of library and information science as well as multimedia technology. Tamkang University Library, with its extensive collections in many subject areas, offers support to the teaching and research projects in library and information science. In addition, the programs in communications and media technology actively provide students with the capability to deal with multimedia related to digital libraries. The areas of specialization are library automation, library collections, information organization, bibliographic references, management of information systems, information retrieval, automated reference services, information systems resource management, bibliometrics, digital image processing, multimedia production, electronic publishing and the book trade. A number of assistantships are available for part-time employment in the library, the department, and other units on campus.

Faculty

Professors
Sinn-cheng Lin (林信成); Mei-yu Wang (王美玉)

Associate Professors
Sheue-fang Song (宋雪芳); Chung-jang Ouyang (歐陽崇榮); Ling-ling Lai (賴玲玲);
Su-kan Lin (林素甘); Wen-Yau Lin (林雯瑤); Ya-Ning Chen (陳亞寧)

Assistant Professors
Hsuan-Pu Chang (張玄菩); Min-Chun Ku (古敏君)

Course Descriptions

Undergraduate Courses

A0055 College and University Libraries (0/2): Topics covered in this course are: organization, housing, and maintenance of material collections; library budgeting; duties and services of the library staff; and the relation of the library to the university or college.

A0143 Public Library (2/0): This course focuses on the development of Chinese libraries and their current functions as educational and cultural institutions. Consideration is also given to public libraries' technical and reader services as a profession.

A0294 Chinese Bibliography & Edition (0/2): This course introduces the contents and characteristics of Chinese bibliographies and versions.

A0561 Indexing and Abstracting (2/0): This course focuses on the following: Concepts of information and its bibliographic control, types of index and abstract, methods of indexing and abstracting relationship between information retrieval, evaluation for indexing and abstracting, indexing and abstracting services and automatic indexing and abstracting.

A0716 Information Centers and Services (2/0): This course focuses on the organization and functions of scientific and technical information centers and their services.

A0718 Information Storage and Retrieval (0/2): This course introduces to students the operations of information retrieval systems and the major factors affecting the performance of such systems.
A0742 Library Management (2/2): This course discusses the application of current management theories and practices to the integrated library programs at all levels.

A0980 Library Operation Evaluation (0/2): Topics of this course include: methods and criteria for evaluating various facets of library service, including the collection, the catalog, document delivery capability, reference services technical processes, and information retrieval operations; deals with cost-effectiveness considerations.

A1179 Literature of Humanities and Social Sciences (2/2): This course covers a variety of information resources in social sciences and humanities, and a study of library issues dealing with these subjects.

A1180 Literature of Sciences and Technologies (2/2): This course studies the major information sources and services in sciences and technology. It offers a survey of the research and communications methods characteristic of these majors.

A1216 Periodical Management (0/2): This course discusses basic step-by-step serials management, emphasizing the principles of collection development and public service, issues and practice.

A1722 Multi-media Technology and Application (0/3): This course offers an introduction to the theory of multimedia systems, technology, and their applications.

A1727 Library Internship I (1/1): This internship (a minimum of 6 hours per week) typically takes place in an elementary school library around communities. The focus of the internship is on collaboration with teachers and working with students to integrate information skills and technology skills into a standard-based curriculum and promote library literacy through School Library Programming.

A1728 Library Internship II (1/1): Students will do their internship in different types of libraries during the summer time. The primary emphasis of this program will be practical works of library operation.

A1729 Library Automation (2/2): This course focuses on the theory and practice of library automation operation and the integrated online library systems. The other automatic processing that affects services provided to users will be discussed in some detail. This class stresses the thinking and planning process, rather than programming and development of library systems.

A1730 Network Resources and Applications (0/2): This course provides current, up-to-date remote and local learning resources for students interested in finding information on the Internet, especially for the World Wide Web.

A1816 Children's Library (0/2): Students will learn the standards, trends, services, research, and evaluation of a children's library. An evaluation of library materials for children with a special emphasis on service for children in school and public libraries will be discussed. Techniques for assisting in planning and carrying out reading programs and story hours will be covered as well.

A1868 Publishing and Communication in the Book Trade (0/2): Publishing and the book trade in the 21st century have become one of the main models of information communication. Either commercial or non-commercial publishing activities have made the knowledge communication more visible and efficient than ever before. Those factors involved in the publishing do not work in isolation, especially in the era of the Internet. Exploring contemporary attitudes and innovations, we see the connections between these factors which are made as often as possible. In order to provide students with a basic understanding of the development of the publishing industry, our emphasis is on the publication as an integrated unit.

A2000 Intellectual Property Rights (2/0): This course provides an introduction to the concepts of intellectual properties. An overview of copyright, patents, and trademarks is provided. The goal of this course is to provide an understanding of concepts that comprise intellectual property law, in order to enhance students’ expertise in a wide range of intellectual-property-related fields.
A2012 Research Methods and Writing (0/2): This course gives an introduction to the methods and procedures of research and the techniques of research writing.

A2190 Government Information and Publishing (0/2): Topics of this course include: the nature and use of public documents from the national and local governments, international bodies, and selected foreign countries.

A2308 Statistics for Library Science (0/3): This course offers an introduction to the descriptive and inferential statistics in information and library science study; fundamental statistical concepts and analytical methods, including measures of central tendency, measures of variability, correlation, tests, and so on.

A2329 Statistics Analysis and Decision Making (3/0): This course emphasizes data analysis and interpretation. Topics include analysis of variance, regression analysis, time-series forecasting and index numbers, decision tree, and so on. The software SPSS will be applied.

A2359 Information Literacy (0/2): This course will introduce students to the concepts of information literacy, discuss the relationship between information literacy and critical thinking, and present strategies to increase information literacy skills.

A2428 Introduction to Digital Archives (2/0): This course discusses various issues of digital archives ranging from the definition to the evaluation of a digital archive project. Other related topics, including technical, legal and social issues, are also introduced to students in order for them to have an overview of the development of digital archiving.

A2432 Information Organization (I) (2/2): This course studies the history, theory and practice of information organization of all materials (traditional and digitized) in the Chinese language. Topics for discussion include: descriptive cataloguing (Chinese Cataloguing Rule (CCR)), subject analysis (Chinese Classification system, Chinese Subject Heading), bibliographic structure (Chinese MARC Format) and bibliographic control (Authority MARC Format).

A2433 Information Organization (II) (2/2): This course studies the history, theory and practices of information organization, primarily in traditional and digital libraries. Students are introduced to the descriptive cataloguing and subject analysis of all types of library resources.

A2480 Project Management of Library (0/2): This course studies the project management theory, software, and how to apply it in library management. In the final report, students must use project management software and all the theories they have learned (e.g., Microsoft Project) to build a simulative project and present it in the last class.

A2515 Medical Information Service (2/0): This course provides an introduction to the basic health information functions, services and systems in the medical libraries. Emphasis will be placed on the role of health information services in terms of access to and disclosure of health information.

A2594 Business Information Service (2/0): This class introduces students to key business information sources and services, including bibliographic, statistical, and government-published sources for marketing, finance, management, accounting, economics, international business, and related fields. Pragmatic skills of business reference, competitive intelligence, collection development, training/instruction, and other services are explored.

A2595 Introduction to Innovative Publishing Industry (2/0): The publishing industry is one of the mainstreams of the cultural and recreation industry. The study of publishing and the book trade can be of great help to librarianship and content/database providers. It makes librarians, publishers, and editors have a good understanding about their surroundings and acquisitions market. Nevertheless, the book publishing industry has been greatly influenced by the IT industry. The aim of the course is to give students sufficient appreciation of the background and to examine the relationship between publishers, booksellers and libraries at a time of rapid change. Attention will also be given to the impact of electronic database publishing, and to the social and economic context of the book trade.
A2596 Introduction to Information Architecture (0/2): This class introduces the student to key concepts and practices of information architecture (IA), including understanding IA within the broader context of librarianship, architecture and user experience, organization structures, labeling and taxonomies, interaction and interface design. Issues on planning, designing, developing, managing, and evaluating web resources are discussed. Practical skill of evaluating the content and technical aspects of existing informational, instructional, and promotional websites designed for libraries, schools, museums, and other organizations are explored.

A2597 Digital Records Management (3/0): This course introduces the concept of digital records management. Digital records management includes many tasks and activities which surround the creation, maintenance and disposal of records. Records management is not only for the theoretical but also for practical activities which support the goals and functions of an organization. The information system of record management will be discussed and operated.

A2604 Library Collection Development (2/2): This course systematically deals with how to select and acquire all library materials, including purchase, gift and exchange, based on the collection development policy of a library.

A2644 Media Resources Management (0/2): The course topics will cover the definition of media resources management, the category and characteristics, the origin and usage of a library, digitalization of media, collection development, and management of a library, etc.

A2691 Digital Storytelling in Libraries (0/2): The simplest definition of “Digital Storytelling in Libraries” for this class is through making and arranging photos or videos, telling a touching story about libraries or bookstores. Through theme-based lectures and practices, students will understand the concepts and skills of digital storytelling, and be able to develop production skills through assignments of photo essays and a 3 to 5 minute-short film team work.

A2692 Picture Book and Young Adult Literature (3/0): Through theme-based lectures, field trips, storytelling practice and reading various forms of children and young adult literature, including picture books, YA novels, and comic books, etc., students will get a basic understanding of the concepts in this field, such as history and development, styles of significant authors and illustrators, awards and prizes, and production process of children and young adult books. Students are also expected to be able to do narrative and visual analysis of books when they finish this course.

A2693 Reading and Bibliotherapy (0/2) This course introduces theories and practices applied to developmental bibliotherapy.

A2694 Arrangement and Description of Archival Documents (0/2): This course is to provide students with the theoretical and methodological knowledge necessary for the following: rules for archival arrangement, rules for archival description, and current issues and development of the arrangement and description of archival documents. In addition, students are encouraged to achieve mastery through a comprehensive practice of archival documents arrangement and description.

A2698 Introduction to Service Marketing (2/0): This course offers an introduction to marketing and public relations. It focuses on service marketing and issues related to non-profit organizations.

A2738 Reference Resources & Services (3/3): This course introduces the concepts and application of reference services and resources in order to improve students’ ability to use reference services.

A2749 English for Library and Information Professionals (2/0): Through the process of finishing editing a handbook/manual, students will be familiar with English commonly used in library settings.

A2783 Mobile Device Programming (2/0): This class will guide students to use tools and resources of programming on mobile devices. Prior knowledge about HTML, CSS, and JavaScript are required.

A2784 Digital Publishing and Creative Design (2/0): This course introduces the digital publishing industry overview in Taiwan and the world, with a practical perspective to analyze industrial operations. Through developing a business plan to simulate operation, the class will also discuss the development of digital publishing and future innovation.
A2785 Introduction to Reading Behavior and Media Consumption (2/0): This course is about the reading behavior change between the new media and digital environment. We just try to analyze the changes with several factors, such as the consumer technology, government policy and whole environment factors.

A3395 Introduction to Library Networks and Information Communication (0/3): This course offers an introduction to library management, organizational structure, network communication; as well students learn to understand the problems and practice of an information retrieval system within the library.

A3397 Introduction to Archival Studies (0/2): This course aims to introduce basic concepts of archival studies, including archives act, public archives, archival administration, collection development, appraisal, archival arrangement and description, archival digitalization, metadata and authority control, user education and exhibition, preservation, etc.

A3399 Seminar on Digital Library (0/2): This course examines the principles and practices of building digital libraries from a socio-technical perspective, including major issues, concepts and trends.

A3400 Information Systems Project (0/3): This course is an integrative and practical course. Students will be asked to develop a complete information system. Some techniques will be applied to the system that includes database, system analysis skill, programming language, GUI design (Flash/Web), etc.

A3401 Studies on Reading (0/2): The course aims at a sufficiently wide scope to identify and describe the characteristics of the act of reading. Based on the needs of understanding the reading history and theory, the course designs a study to analyze the quality and level of reading activities. This will include considerations for reading program development, and alternative reading issues.

A3406 Introduction to Librarianship and Information Science (2/0): Students will gain a basic knowledge of library practices and their management, including the development, design and evaluation of library services at all levels.

E0650 Data Structures (0/2): This course is an introduction of the data structures that allow computers to process more efficiently.

E0675 Computer Programming (2/2): This course systematically deals with the theory of computer language, programming and practical works in various types of applications.

E0941 Introduction to Database (2/0): This course covers database analysis and design, the properties of relational databases and the designing methods for developing the database management systems.

E1034 Introduction to Computers (2/2): This course offers an introduction to the fundamental concepts of computer and information theory and practice of advanced computer skills.

E1039 Introduction to Computer Network (0/3): The course introduces the basic concepts of a communication network, such as network protocols, network topology, wireless networks, mobile communications, etc. It also covers advanced Internet skills and applications.

M0400 Management Information System (0/2): This course introduces information management. It provides an overview of contemporary information systems, technology-computer, telecommunications and office systems management. The objective of this course is to help students understand contemporary IT topics, including supply chain management, customer relationship management, knowledge management, electronic commerce, etc.

M1103 Knowledge Management (2/0): This course introduces knowledge management (KM). It offers an overview of a wide range of knowledge management techniques. The course not only discusses theory but also the best practices. The objective of this course is to help students understand the contemporary KM topics that include building block of knowledge management, defining
knowledge goals, sharing and distributing knowledge, using knowledge, measuring knowledge, incorporating knowledge managements, etc.

Master’s Program

A1381 Library Administration and Management (2/0): This course offers an introduction to library management theories, concepts, processes, and practices as well as designing, organizing, budgeting, controlling and reporting of library operations; techniques and methods of examining and evaluating personnel performance and staff development and training.

A1865 Seminar in Archival Studies (2/0): The purpose of this course is to introduce the whole concept of archival studies, including archives act, public archives, archival administration, collection development, appraisal, archival arrangement and description, archival digitalization, metadata and authority control, user education and exhibition, preservation, etc.

A2089 Seminar on Information Behavior (3/0): This course explores many aspects related to information-seeking behavior. Information-seeking behavior is regarded as crucial for all information professionals since it has implications for system design, information service provision, and instruction. Information-seeking theories, methods, and user behaviors will be covered in order to gain an understanding of how different groups of people seek, gather and retrieve information in a variety of information environments. Information-seeking behavior draws on literature from library and information science, psychology, and communications.

A2291 Reader Services (3/0): This course explores library collection, circulation and reference for the purpose of reader services, as well as the characteristics of the different patron group services. Librarians now must have a clear idea in mind about: the moral discipline of librarians, the education for users, information seeking behaviors of users, networking resources and interlibrary loans.

A2326 Digital Publishing and Scholarly Communication (0/2): Digital publishing has become a new medium that will have a fundamental effect upon all areas of the book trade and publishing industry. However, the scope and issues of DP are too diversified to focus on the research/course schedule. This course, as the course title suggests, will focus on Scholarly Electronic Publishing (SEP) and on the development of scholarly communication, including course theme and introduction, scholarly journal system, journal crisis, academic e-books, and the emergence of SEP and editorial system as a solution to librarianship and the publishing industry of the scholarly community.

A2354 Statistics for Information & Library Science (0/2): This course offers an introduction to the statistics application in information and library science study. The course focuses on multivariate analysis, such as ANOVA, MANOVA, Multiple Regression, Factor Analysis, Cluster Analysis, etc. Some tools like SPSS will be used.

A2490 Seminar on Digital Information Preservation (3/0): This course focuses on the methods of managing electronic resources efficiently, including the delivery of digital contents to end users and the management of the life-cycle related to electronic resources, such as acquisition, payment, licensing, archiving, preservation, convergence of different types of digital resources, and standards needed to facilitate the management of electronic resources.

A2491 Seminar in Technical Services (0/2): To investigate how various information resources and metadata standards are used to deliver customized information services, and organize information in terms of practices and theories, especially on digital information organization and representation.

A2576 Ebook Production and Applications (3/0): The course leads students to understand the relative issues about ebooks. These issues include ebook specifications, ebook production, ebook tools and current significant research over the world.

A2577 Human Computer Interaction (0/3): This course is intended to achieve the following course objectives: understand basic HCI concepts and definitions; understand users and methods of collecting appropriate data; study User-Centered Design, task analysis, and other key HCI methods; develop an understanding of needs analysis of user interactions; perform prototyping and evaluation; perform usability testing; and understand design evolution.
A2584 Introduction to Library and Information Science (2/0): This course introduces the development of library and information science; demonstrates the history, mission, functions and types of library; demonstrates the operations of library and other information service work; and demonstrates the professional organizations, competencies, ethics, and attitudes.

A2627 Research on Digital Archives (0/3): This course guides students in learning about the theory and practice of Digital Archiving.

A2667 Digital Content Industry and Library (3/0): This course introduces various perspectives on the digital content industry and library. The primary focus is to explore the elements in the digital content industry, such as provider/customer, products, pricing, licensing, services, and technologies, as well as the relationship with the library. Through lectures, reading and discussions, students will become familiar with various issues in the digital content industry and library.

A2683 Seminar in Digital Marketing and Information Services (2/0): Two methods are adopted to gradually increase students’ marketing knowledge and techniques. The first method is using an informal seminar style that encourages students to discuss the foundational text concepts being taught. The second instills more structured analytical techniques as a method for becoming proficient at market examining. Contemporary cases are extracted from the literature to analyze the e-marketing approaches for information services, while also improving critical thinking skills by applying text concepts.

A2765 Value-Added Application in Digital Archives (3/0): This course introduces the concepts of digital archives and the methods and achievement of value-added application in digital archives.

A2819 Metadata and Its Applications in Digital Libraries (0/2): This course investigates how various metadata standards are used to organize information in terms of practices and theories, especially on digital information organization and representation.

A2869 Seminar on the Electronic Publishing Industry (0/3): This course explores the industry of e-publishing, discussing the marketing mix of e-readers, publishing, pricing and channeling. In addition, different case studies of e-publishing are explored, including Google, Amazon, and Apple. Different strategies adopted by these companies are presented and briefly discuss why they succeeded or not.

A3422 Informetrics (0/3): This course aims to quantify, describe, and predict the processes of written communication. Topics include: scattering of the literature, growth of the literature, scholarly productivity, collaborative authorship, citation motivation, citation practice, citation problems, evaluation of journalized databases and obsolescence.
DEPARTMENT OF MASS COMMUNICATION

Degrees Offered: B.A., M.A.

Chairman: Chuan-yang Hsu (許傳陽)

The Department

Undergraduate Program
Established in 1983, the Department of Mass Communication embraces the most fundamental aspects of human interaction, from traditional mass communication to cutting edge communication technologies and information studies. Rooted in the College of Liberal Arts, the department is founded on a broad liberal arts education as the first professional requirement for future communicators. Students approach mass communication as science, art, and service while relating it to many facets of society.

Students majoring in mass communication must fulfill requirements for a Bachelor of Arts degree in the College of Liberal Arts. The curriculum focuses on content production, marketing communication, as well as the humanities and social science. A selection of courses in the sequences—TV, Radio, Films, Advertising, Public Relations, and Information Technologies—provide the technical training and knowledge required to carry out professional work in the field of mass communication.

Graduate Program
The department’s master’s program was launched in 1995. The establishment of this graduate program was a response to the strong demands of highly qualified communication professionals and in accordance with the University’s long-term strategic plan. The graduate program focuses on providing advanced education in the fields of Information Studies and Marketing of Culture.

Over the years, our alumni have thrived in the areas of advertising, journalism, marketing, television, and information services. With a solid foundation in mass communication, the graduates are also well prepared for the pursuit of advanced academic study in either domestic or international graduate programs.

Faculty

Professor
Yaly Chao (趙雅麗)

Associate Professors
Huei-chun Chi (紀慧君); Weitsy Wang (王慰慈); Ming-yu Yang (楊明昱);
Da-Lun Tang (唐大崙); Chuan-yang Hsu (許傳陽)

Assistant Professors
Yu-lin Chen (陳玉鈴); Yu-pei Ma (馬雨沛); Hui-Ju Tsai (蔡蕙如)

Lecturers
Wei-kang Wang (王維綱)

Degree Requirements

1. Requirements for a B.A. degree in Mass Communication:
   Completion of 128 credits of courses, including 73 credits of required courses and 55 credits of elective courses.

2. Requirements for a Master’s degree in Mass Communication:
   Completion of 30 credits of courses, including 9 credits of required courses and 21 credits of elective courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member, and pass an oral examination.
Course Descriptions

Undergraduate Courses

A0301 Multi-Media Communication (2/2): This course introduces application of multiple media content in a single work. In most cases, students suffer from the “language-image” conversion, understanding the use of images is vital in digital multimedia environment. Hence, the process of conveying a concept into images is the main theme of the course. This course will also assist students in enhancing their skills in moving images.

A0557 Feature Writing (0/2): This course is an advanced course in writing feature articles for newspapers and magazines. It covers basic components of feature writing principles, style, and structure, emphasizing different style writing purposes, connotation and techniques.

A0597 Advanced Professional Photography (0/2): This course provides operational training of the 4x5 Professional View Camera, manual lighting, various functional techniques of studies operation to coordinate the photographic knowledge and techniques with the requirements of advertising agencies printing media making techniques.

A0660 Newspaper Practicum (3/3): This course is designed for students to practice news writing and news editing through participation in the operation and production of community weekly newspapers.

A0667 Visual Communication (2/0): This course is designed to teach students how to analyze images and how to use images to communicate their ideas.

A0679 Mass Communication Research Methods (2/2): This course introduces students to the approaches to social research in mass communication as well as on how to analyze data and utilize results to solve problems related to mass communication.

A0692 Journalism (2/0): This course provides a survey of current theories and development of journalism. In this course, news is an interactive process, not only produced, but also transmitted and received.

A0764 Advertising (2/0): This course provides an introduction to advertising theories and the process of advertisement production. This course tries to let the students learn related knowledge about advertising and to inspire the students to pursue an advertising related career.

A0844 Introduction to Drama (0/2): This course explores the fundamentals of drama and provides practical experience with stage performances in the Experimental Theater. It enhances students’ advertising literacy and enables them to apply what they learn in the real world.

A0868 Introduction to Art (0/2): This course introduces students to the masterpieces of painting, sculpture, architecture, dancing, opera, and drama around the world, from the dawn of civilization to contemporary art.

A1082 Production of Broadcasting Programs (2/2): This class provides students with hands-on experiences of radio program production and also helps them understand the concepts and issues of the field.

A1084 Introduction to Sociology (2/2): This course is an introduction to the basic concepts of sociology. This course will inspire students with wider imagination, useful for understanding social phenomena and practice in the mass communication.

A1087 Colloquium for Communication (2/0): This course is a pro-seminar type of course, providing a common open discussion ground on the current communication issues and problems by inviting scholars and specialists from various areas of communication.

A1103 Media Critique (0/2): This course offers an application of theories of media to analyze the media culture in Taiwan. This course is designed for those interested in critical theory and training in critical thinking.
A1209 Communication Theories (2/2): This course familiarizes students with how communications work; system and functions of mass communications; communicators, messages, channels, audience, process, and effects.

A1264 Media Management (0/2): This course offers an introduction to the various schools of management theories, case studies of media, and application of theories.

A1418 Broadcasting Practicum I (1/1): This course immerses students in a practical setting to foster their competency in media management and program production in the field of radio broadcasting.

A1419 Broadcasting Practicum II (2/2): This course is a continuation of Broadcasting Practicum I.

A1504 Introduction to Public Relations (2/0): This course provides an introduction to Public Relations and the operational models, basic learning of PR theory and PR practice.

A1568 Basic Photography (0/2): This course explores the theories of photograph materials and processes, and photographic techniques and equipment.

A1745 Script Writing for Movie and TV (0/3): This course emphasizes both writing theory and practical experience with scriptwriting (movies, TV shows, plays), with special attention to the arrangements of characters and scenes.

A1780 Off-campus Practicum in Media (2/0): This course provides an opportunity for students who wish to practice in various areas of mass communication.

A1963 Broadcasting Practicum III (1/1): This course is a continuation of Broadcasting Practicum II.

A2209 Communication Psychology (2/2): The Psychology of Mass Communication maintains a multidisciplinary appeal and draws from developmental psychology, sensory and cognitive psychology, systems theory, and positive psychology. Psychology is a crucial factor that enables a message to trigger effects in others. For a better understanding of psychological effects in the field of communications, this course introduces the relationship of the human mind and behavior; and how they affect individuals and society.

A2281 Popular Culture (0/2): This course introduces popular cultural phenomena and the meanings and ideologies behind them. Cultural phenomena such as American’s Woodstock Rock Music Festival to Jay Chow’s popularity in Taiwan in the field of popular music; icons from Marilyn Monroe in the U.S. (and to the world) to Lin Chi-ling in Taiwan, comedy cultures from Charlie Chaplin to Stephen Chow, etc. will be introduced as texts for analyses. Furthermore, this course introduces important theorists of contemporary visual culture studies, such as Jean Baudrillard, Louis Althusser, Antonio Gramsci, Walter Benjamin, Roland Barthes, and Judith Butler. This course employs a cross-cultural and interdisciplinary approach to familiarize students with the complex ideologies behind popular cultures.

A2342 Public Communication (0/2): The goals of this course are to help students: (1) to develop confidence when expressing themselves before a group; (2) to reason logically; (3) to orally present their information, ideas, and opinions in a coherent, organized fashion; (4) to learn the basics of outlining and organizing a speech; (5) to learn the basics of informative and persuasive speaking listen critically and objectively.

A2383 Introduction to Digital Content (2/0): This course introduces digital applications of diffusion of innovations and changing attitude. Every unit in the course introduces operating methods of knowledge, persuasion, decision, implementation, and confirmation by using digital media; and discusses theory and practice process. This course provides a cross-media and cross-domain view of digital communication for students.

A2459 Introduction to Communication Profession (2/0): This course is designed for the freshmen of Mass Communication Department, helping new university students to bridge the gap between high school and college and acquire abilities for their learning life and competence in the long run. The course content includes: communication introduction, course structure of the Mass Communication
Department, educational goals of the Mass Communication Department, course selection decision making, learning attitude, information literacy, thinking and reasoning, EQ management, and expression ability.

A2460 Graduate Project: Independent Study and Exhibition (3/3): This course covers three subjects: film production, multimedia production, marketing communication campaign design. Students need to complete a finished work either on paper or visual presentation for their special study.

A2520 Cross Media Marketing Planning (2/0): This course provides a basic introduction to cross media marketing and related applications. Students will be trained for their planning ability to conduct a cross media marketing campaign.

A2523 Pro-seminar for Marketing Communication (0/2): This course covers multiple subjects about marketing communication. Students need to conduct teamwork for their selected case study related to marketing communication.

A2524 Storyboarding and Editing of Audio Visual Programming (2/0): The aim of this course is to analyze the basic visual and dramatic components of a shot and the editing principle of a narrative.

A2525 Social Marketing and Practice (2/0): This course is designed to realize the theory and practice of non-profit organizations and the third sector how to promote and communicate their ideas to public by marketing theory.

A2526 Communication English (2/2): This course introduces students to some major English newspapers, news agencies, and English newspapers’ headlines and leads. Students will be trained in their English news reading, translating, listening, speaking, and writing skills.

A2528 Information Writing and Editing (3/3): This course gives students opportunities to practice reporting and writing for print media, editing and headline construction, and page design.

A2529 Readings in Communication (0/2): As an introduction to the fundamental contemporary and classical works in communication arts; this course is designed to make a connection across texts, authors, producers, institutions, society and history.

A2531 Television Practicum (I) (2/2): The course is intended to offer students the opportunity to produce creative TV news and programs. Students are taught to be responsible media professionals and are prepared to adjust to the changing electronic media environment.

A2532 Television Practicum (II) (2/2): The course is intended to offer students the opportunity to produce creative TV news and program. Students are taught to be responsible media professionals and are prepared to adjust to the changing electronic media environment.

A2534 Law and Ethics in Communications (2/0): This course aims to introduce the major concepts in the regulation of media industry. Issues discussed in this class include the freedom of speech, the access of media and the protection of privacy rights. The goal of this course is to prepare students with a basic understanding of legal issues in the field of media professionals.

A2544 Introduction to Human Communication (0/2): This broad-based communication course includes the theory of communication, interpersonal communication, small group communication, and public speaking. Students are invited to investigate life and career planning from their communication perspective.

A2545 Documentary Photography (2/0): This course is designed for students to understand the principle of documentary photography. Students will learn the knowledge and technique and build the creative ability of a series of images in this field.

A2553 Visual Art (0/2): This is an advanced class studying the ways in which visual media create meanings. Emphasis will be placed on filmic and tele-visual texts.

A2554 Introduction to Marketing Communication (0/2): The main purpose of this class is to
enlighten the students on marketing communications and promote their knowledge about the marketing communications. Hence this class is arranged to introduce the basic concepts, methods and instruments of the marketing communications with real examples. The students also have lots of chances to practice the marketing communications by the required assignments during the term.

A2555 Development of Media Communication (0/2): This course emphasizes the procedures of developments in mass media, and also emphasizes the relationship between mass media and contemporary society.

A2593 Introduction to Film and TV Entertainment Industry (2/0): This course introduces to students the basic structure of the film and TV industry. It explores three aspects of entertainment industry: TV and related industries. Professionals in the related fields will be invited to the class to discuss face-to-face with the students.

A2853 Pre-production of Audio Visual Projects (2/2): This course is designed to provide students with the planning methods of various types of audio visual projects, and a complete how-to workshop on the pre-production field in a project.

A2854 Production of Audio Visual Project (2/2): This course teaches students characteristics of audio visual projects, procedures, models, pre-production planning and strategy, camera shooting, live-coverage, post-production, editing, wound-effect, special effects, sound recording and viewers.

A2885 New Media and Citizen Praxis (0/2): The course focuses on new media’s activities, energy and mobilization in civil society. Students will study to explore the theory of civil society, then analyse, observe and learn to manage issues and diffuse ideas.

A2967 Exhibition of Cross-Media Project (0/2): This project focuses on strategic storytelling, particularly in the field of communicating in the light of digital, network-based, and mobile media and the increasing use of web 2.0 and social media-services. From a cross-media perspective, we will focus on the opportunities and challenges which these new media technologies, platforms and services. With our circulation of media content, we also focus on cross different media systems, competing media benefit depend on consumer's active participation before the exhibition.

A3010 Storytelling and Creativity (2/0): FB (Facebook) is a modern social network platform that is used every day. The number of users in the world exceeds 1.1 billion, especially in Taiwan. Facebook is not as simple as it is supposed to be. If you use the usual way to send a message, people will not be interested. Therefore, by following the course, you can learn if your Facebook will attract people to praise it, and learn how to write a good post on Facebook.

A3011 Basic Audio-Video Production (0/3): This course provides students with lectures and hands-on experience regarding contemporary audio-visual technology and its applications in media.

A3018 Message Design Fundamentals for New Media (0/2): In this course, there are various examples showing how to design layouts by using 3 styles and 5 elements. The content is divided into learning, analysis and practice. The basic concepts include three different styles: practical style, relaxed style and emotional style. Five elements: layout style, intelligence, motion, graphics rate and hop rate. By finding a suitable method through matrix analysis, every student can make adjustments to design the right information layout of any new media.

A3409 Current Issues in Communication (3/3): This course examines existing issues in communication education, media literacy, broadcasting, press, communications policy, etc., with a focus on current debates. The goal is to develop a practical approach to current debates while at the same time encourage students to develop a critical thinking and understanding of certain controversial communication issues. Discussions will be focused on a particular issue of the week, and the assigned reading will contain articles relevant to that issue. All students are expected to read the articles before the class and assigned groups are required to prepare for seminar presentations.

A3414 Digital Communication (2/2): This course introduces design and process of the still image for digital environment presentation. To achieve the learning objective, Adobe Photoshop and Adobe InDesign are used as the tool to understand the characteristics of static digital media. Because this
A course is designed for communication majors to better handle digital media, the process of conveying concept is the main theme of the course. This course provides a cross-media and cross-domains view of digital communication for the students.

A3529 Film Aesthetics (2/0): This course will examine various theories of film and cultural studies. Different aspects of films, such as social, aesthetic, cultural, and political, will be explored.

M0550 Public Relation Practicum (0/2): This course focuses on the study of the relationship between PR and media. By analyzing PR cases, students will be able to apply PR theory to real practice.

Master’s Program

A1209 Communication Theories (3/0): This course is designed to help students understand the nature of theory, how to develop a theory, and how to use it. It is also designed to sensitize students to the role and types of inquiry. Specific theories are used as background information and as examples.

A1462 Discourse Analysis (0/3): This course introduces students to several major branches in the analysis of discourse. We will cover discourse analysis from an interdisciplinary perspective and will apply different approaches, ranging from sociolinguistics and narrative analysis to conversation analysis and critical discourse analysis.

A2488 Special Issues in Film and Culture (2/0): This course explores the interrelationship between film and culture. Various schools of theories, critical methods and approaches will be reviewed. Different issues on film and culture are emphasized in each semester.

A2489 Media and Cultural Consumption (2/0): This course provides students with some analytical and methodological tools and encourages them to have critical reflections upon their everyday life. It emphasizes the dynamic connections between research problem, method, theoretical approach, analytical concept and subject matter. Multiple, intersecting structures of power, meaning, and culture will also be examined.

A2766 Cross Media Marketing Communication (2/0): This course provides the basic introduction to cross media marketing communication and related application. The students will be trained for the planning ability to conduct a cross media marketing communication campaign.

A2768 Visual Analysis in Media Psychology (2/0): The aim of the course is to provide students with a general understanding of human visual information processing. This will be done with an emphasis on the method of cognitive psychology and eye-tracking tools for current message design.

A2769 Cultural Brand Management and Marketing (0/3): This course provides the basic introduction to the brand related theory and the branding process. The students will be trained for the cultural brand management and marketing ability.

A2771 Seminar on Cultural and Creative Industries (0/3): Through literature review and case study, this course is geared toward a comprehensive understanding of (1) the nature of cultural industries; (2) Cultural products and spin-off development; (3) Cultural industries: task analysis and production line; (4) Conceptualization Value chain and value-added activities that help a cultural product thrive.

T0081 Research Methodology (3/3): This course explores issues relevant to measurement, design, and analysis in communication research, using techniques of both qualitative and quantitative research methods.

T8000 Thesis (0/0)

A2953 New Media & Marketing Strategies (3/0): The purpose of this course is to address the marketing challenges brought by the new media environments. New marketing strategies are required and new insights of the consumers become necessary in the age of social media. Therefore, in conjunction with reviews of marketing fundamentals, this course focuses mainly on the impacts and future developments of new media on the brand and competition strategies.
A2968 Curations and Communication Studies (0/2): The framework for this course is composed of the participatory culture of the cultural heritage institutions, audience analysis, and communication through a variety of media. The structure of class is based on case studies of creativity and museums using the symbols for curating, outreach, and communication. The vision of the cultural heritage institutions as part of a participatory culture is introduced. The purpose of class concerns the relation between cultural heritage institutions and users, and the fact that it is not even. Nevertheless, the media offers room for audience involvement, despite the institution deciding the arena in most cases.

A2969 Social Marketing Project (0/3): This course focuses on the concept, construct and theoretical perspective of social marketing, in order to improve the quality of life.

A2970 Creative New Media Project (2/0): The project modules emphasize interdisciplinary and collaborative work. Students in this project can choose to focus their studies on visualization research, social media, interaction design, interactive and generative storytelling. Sharing knowledge and working in collaborative groups within experimental production, and research processes is a basic premise of our work by designing the new media application project.
DEPARTMENT OF INFORMATION AND COMMUNICATION

Degree Offered: B.A., M.A.

Chairman: Yi-Wen Chen (陳意文)

The Department

The Department of Information and Communication, established in 1998, offers an in-depth study into various aspects of an increasingly growing technology-mediated-communication world. Its mission is to achieve academic excellence and gain national as well as international recognition in education, research and service. As the boundaries among communication media become blurred, scholars and professionals are presented unprecedented opportunities and challenges to participate in the shaping of the digital future. The curriculum aims to address the broad range of changes that have occurred in the information and communication industry in recent years. Students may customize their studies based on two options: (1) interactive new media design and production, and (2) information and communication management and marketing. Although students are encouraged to focus their studies on one of the two tracks upon their admission to the program, students may move freely between the tracks to gain necessary expertise needed in today’s workplace. Overall the program will enhance students’ understanding of information and communication technologies and their impact on the social, cultural and commercial domains; prepare students to excel in diverse new communication environments; promote artistic creativity, strategic planning and scholarly research in all areas of digital media; and prepare students for careers in new media as well as the traditional media industries transformed into new information and communication technologies.

Faculty

Associate Professors
Mei-ling Jow (卓美玲); Hui-chuan Liu (劉慧娟); Chien-chou Shih (施建州);
Chien-yu Sun (孫蒨鈺); Yi-Wen Chen (陳意文); Hui-ju Lai (賴惠如)

Assistant Professors
Jyh-ming Yang (楊智明); Jiun-Shian Lin(林俊賢)

Lecturer
Hsian-fu Lu (盧憲孚)

Degree Requirements

Requirements for a B.A. degree of Information and Communication:
Completion of 128 credits of courses, including 58 credits of required courses and 70 credits of elective courses.

Facilities
The Department has its own New Media Center (NMC)

Course Descriptions

Undergraduate Courses

A1084 Introduction to Sociology (0/2): This course provides a broad overview of sociology and how it applies to everyday life and issues pertaining to our society. Major theoretical perspectives and concepts are presented, including culture, deviance, gender, inequality, social change, and social structure. Special attention will be placed on the influence media and communications.
A1718 Message Design (0/2): This course intends to equip students with the basic concept of information architect and information design through the engineering of instructions, information graphics and the creative game design in treasure-hiding and treasure-hunting.

A1780 Internship (0/2): This course provides opportunities for students who wish to gain professional work experiences in various areas of the information and communication industry before graduation.

A1930 Introduction to Human Communication (3/0): This course provides an overview of concepts and principles in human communication studies.

A1931 Information, Communication and Society (0/2): This course leads students to a better understanding of the interactions among information, communication and society and thinking how to apply social psychological and communicational observations on the creativity work or marketing activities in the information and communication industries.

A2008 Digital Sound Effects (2/0): Design of this curriculum is to learn the basics of sound effects and music, the correct operation of sound editing software, and the application of sound production. Through discussing examples of various animations, theater, and films; sound effect assignments and projects, students are expected to have an in-depth understanding of sound (both sound effect and music) production and further to learn about the image with sound aesthetic ideas.

A2163 Topical Seminar in Information Networks (0/2): This course explores current trends and issues concerning information and communication networks and industries.

A2209 Psychology of Communication (2/0): This course leads students to a better understanding of the related psychological theories by communication examples, and learning how to apply psychological theories to communication practices.

A2258 Introduction to Sketch (2/0): This course introduces elements of sketch to develop students’ competence in visual thinking through hands-on practice.

A2259 Practicum of Creative Digital Media I (3/0): This course provides opportunities for students to develop team projects on topics relevant to creative multimedia.

A2260 Practicum of Creative Digital Media II (0/2): This course provides opportunities for students to develop team projects on topics relevant to creative multimedia.

A2312 English Readings in Information and Communication I (1/0): This course introduces reports and papers on the current developments of information and communication written in English and published in the trade journals or on the Internet.

A2340 Interface Design (3/0): This course focuses on the visual graphics design, interactivity, and information and communication of user interface design and will inspire students’ creativity for the future in studio projects.

A2365 New Media Theories (2/0): This course focuses on the major concepts, constructs and theoretical perspectives concerning information and communication or new media.

A2367 Computer Programming: Active Server Pages (0/2): This course practices the flash action script design and advances the programming skills of multimedia interactive projects for the future.

A2404 Introduction to the Digital Content Industry (0/2): This course offers an introduction to the development, practices, strategies and challenges of the digital content industry in Taiwan.

A2405 Integrated Project in Digital Content I (3/0): This course introduces production techniques and provides hands-on experiences in developing digital content projects.

A2406 Web-Based Interactive Programming Design (3/0): This course introduces the development of the Unity3D interactive program project.
A2411 Integrated Project in Digital Content II (0/3): This course introduces advanced production techniques and provides hands-on experiences in developing digital content projects.

A2509 Digital Marketing (3/0): This course explores creative strategies and applications of marketing in the digital environment.

A2512 Digital Image Creation (0/2): In this course, students learn to use the software technology to present the concept of creation and improve design capabilities.

A2513 Digital Video Production (0/2): This course is emphasized to introduce the process, effect, and editing of digital film production by studying the software Adobe Premiere and After Effects. Students will practice their technical skills and creativity through creating film projects.

A2514 Creative Strategies and Proposal Writing for Marketing (0/2): The course introduces students a complete understanding of the creative strategy development process and an appreciation for the critical role creative strategy plays in marketing campaigns. This course is a required course for follow-up portfolio building courses.

A2599 Storytelling and Storyboarding (3/0): This course explores the techniques and applications of storytelling, and storyboarding across various media.

A2600 Interactive Marketing (0/3): The teaching goal of this course aims at introducing the core concepts of experimental marketing and realizing the fundamental elements of interactive design. Besides, some cases will be provided as examples, including interactive music museums, galleries, interactive films and interactive installation.

A2601 Web Service System Practices (0/3): This course introduces technical specifications and applications of web service systems and provides opportunities for hands-on experiences of establishing and managing web service platforms.

A2675 Graduation Project I (3/0): This course provides opportunities for students to conduct projects in their areas of specialization within the realm of new media.

A2676 Graduation Project II (0/3): This course provides opportunities for students to conduct projects in their areas of specialization within the realm of new media.

A2677 Current Issues in Information and Communication I (3/0): This course examines current issues resulting from the emergence of advanced information and communication technologies.

A2678 Current Issues in Information and Communication II (0/3): This course examines current issues resulting from the emergence of advanced information and communication technologies.

A2679 Practicum of Creative Digital Media III (2/0): This course provides opportunities for students to develop team projects on topics relevant to creative new media.

A3420 Aesthetic Strategies and Design (3/0): This course introduces the concept and design principles of esthetic strategy and experiential marketing.

A3443 3D Animation (0/3): This course introduces the general principles, specific techniques and provides hands-on practice of 3D computer animation design and production.

A3447 Creative Design of Digital Content (0/3): This course intends to inspire students to create their own imagination in creative culture business through the study and creation of eye-catching character-playing and heart-touching story-telling.

A3483 Selected English Readings in Information and Communication II (0/1): This course introduces reports and papers on the current issues of information and communication written in English and published in trade journals or on the Internet.

B0061 Introduction to Marketing (0/2): This course discusses the basic principles of marketing
strategies and planning.

**E0594 Programming Design (0/2):** This course introduces the basic syntax of programming language and its application in interactive web design.

**E0718 Computer Graphics (0/2):** Through studying the software Adobe Illustrator, students create story books and commercial design in order to understand the principle of computer graphics, the concept of layout design, objects of esthetic sense, and the process of a printing and output system.

**M0979 Legal Aspects of Information and Communication (0/2):** This course focuses on fundamental legal issues pertaining to information and communication technologies and industries.

**A2774 Introduction to Technology Arts (0/2):** Through readings, case studies and practice, students learn to understand the creation concept of technology art.

**A2788 2D Animation (3/0):** This course focuses on 2D animation production including script writing, design theory, production processes, aesthetics, and technology.

**A2850 Creative-oriented Business Plan (0/3):** The teaching goal of this course aims at leading students to learn entrepreneurial knowledge and skills. Students can develop a creative proposal from beginning of new ventures.

**A2851 Narrative on Vernacular Culture Project (3/0):** This course is an advanced class designed to continue the story projects conducted in its pre-requisite “Storytelling and Storyboarding” class. In addition, the course is also by itself a series of service-learning based activities; students are trained and motivated to perform storytelling projects.

**A2852 Social Media Marketing (3/0):** Social Media Marketing is an integral part of most companies or organizations marketing communication channels; the course covers the concepts and applications of social media marketing. Students learn how to construct strategy, planning, and the actual implementation of an effective social media marketing.

**A3403 Seminar in Information and Communication (0/2):** This course invites distinguished CEOs and managers of IC industries to share their industrial experiences and insights with students.

**A2890 Introduction to New Media Technologies (2/0):** This course will examine key moments and historical stages in computing and media developments to gain a perspective on the nature of technological innovation and change.

**A2893 Digital Photography (2/0):** This course allows students to learn how to use software technology to present the concept of creation and improve design capabilities

**A3446 Selected English Readings in Information and Communication I (1/0):** This course familiarizes students with terms and concepts of information and communication in English through reading selected contemporary articles.

**A1780 Off-Campus Practicum in Media (2/0):** This course provides opportunities for students who wish to gain professional work experiences in various areas of the information and communication industry before graduation.

**A2891 Media Theory (0/2):** This course explores issues about the uses, meanings, causes, and effects of rapid or dramatic shifts in techno-infrastructure, information transformation, and forms of mediated expression.

**A2892 Color Application (0/2):** This course focuses on the basic concepts and practice in the color theory and visual design in order to apply both theories in the information and communication or new media.
A3439 Creative Thinking (0/3): This course activates student’s creativity through practicing and implementing creative thinking. Through the Creative Strip Show, student’s courage at being creative is inspired by eliminating all stereotypes and barriers.

A1932 Introduction to Visual Communication (2/0): This course introduces basic elements of visual images and explores techniques of reading and analyzing visual images.

A0679 Communication Research Methods (2/0): This course introduces the basic concepts, procedure and designs of research methodology, how to choose the best methods to solve problems according to different occasions, and practice the operation of methodology.
COLLEGE OF SCIENCE
COLLEGE OF SCIENCE

Dean: Zicong Zhou (周子聰)

Brief History

Established in 1958, the College of Science consists of three departments, one bachelor’s program and three research centers. Three departments are Department of Mathematics, Department of Physics and Department of Chemistry. The bachelor’s program is Bachelor’s Program in Advanced Material Sciences, and three research centers are the Life Science Development Center, the Center for Science Education and the Research Center for X-ray Science. It is one of the oldest colleges in Tamkang and one of the first-established colleges among private universities in Taiwan. The departments of Mathematics and Chemistry were set up in 1958; the Department of Physics was inaugurated in 1963; the Bachelor’s Program in Advanced Material Sciences was established in 2015. The college has a tradition of active teaching and research, which has prompted steady growth in the number of its students and staff over the years. As of 2015, the college has 68 full-time faculty members, including 35 professors, 26 associate professors, and 7 assistant professors. All faculty members hold a Ph.D. degree, obtained locally or abroad.

In addition to designing college curricula, our faculty devote themselves to the planning and teaching of the university’s core courses, which include Natural Science and Global Technology Revolution. In 2000, the Mathematics and Physics departments, with the support of the Ministry of Education, set up consultation centers that provide consulting services to high school science teachers. The College emphasizes basic and applied interdisciplinary science programs. Its main focus for both teaching and research therefore includes photo-electronics, materials, biochemistry, and life science.

A pioneering “self-evaluation” program was launched jointly by the college’s three departments in 1999. Under the program, teaching staff constantly reform and improve the undergraduate curriculum in order to adapt to the nature of an ever-changing society.

The Department of Mathematics has established a Data Science Section and a Mathematical Statistics Section. The Department of Physics offers two programs at the undergraduate level: the Electro-optical Physics Program and the Applied Physics Program. The Department of Chemistry is made up of two sections: the Chemistry and Biochemistry Section and the Material Chemistry Section. These programs have been followed up with a continuous process of monitoring.

Motto and Goals

1. Having teachers teach and learn in a fun and enjoyable way; achieving holistic personal growth.
2. Encouraging students to value the pursuit of knowledge and to cultivate not just knowledge, but also virtue.

Future Development

1. Facilitating communication among teachers from different departments.
2. Helping young faculty with teaching and research work.
3. Inviting outstanding teachers to join.
4. Enhancing collaboration with other universities.
5. Strengthening academic cooperation with local high schools.

Course Descriptions

Undergraduate Courses

**A0452 Introduction to Japanese:** This course begins with instruction in the Japanese alphabet. By teaching basic vocabulary; this course helps students to apply Japanese to their everyday lives. Interactive activities are also designed to motivate beginners.

**F0568 Advanced English Reading and Writing:** The purpose of this course is to build students’ reading strategies and vocabulary, thereby helping them to read academic texts with relative ease.
Techniques, such as organizing ideas and writing essays in English, are also introduced in this course. The goal of this course is to help students perform well on the iBT TOEFL and IELTS tests.

**F0591 Japanese Reading and Composition:** This course covers beginning and intermediate Japanese reading and writing. In reading articles, students develop a wider vocabulary and increased proficiency in grammar. Moreover, by compiling short essays, students are encouraged to practice using the grammatical structures taught in class.
DEPARTMENT OF MATHEMATICS

Degrees Offered: B.S., M.S., Ph.D.

Chairman: Ting-Hui Yang (楊定揮)

The Department

This department was founded in 1958 and since 1966 has consisted of the Mathematics and the Statistics sections. The master's program was established in 1969 with the addition of the Ph.D. program in 1990.

The primary goal of the department is to provide students the opportunity to understand basic concepts of mathematics, to explore various related domains, and to broaden their views in mathematics and statistics. The department offers both need-based and merit-based scholarships.

The department has its own computer laboratory complete with 100 personal computers and internet access. Mathematics/statistics software packages such as SAS, MATHEMATICA, MATLAB and MAPLE are available for teaching and research. The Tamkang Journal of Mathematics, an internationally-known quarterly, was first published by the department in 1970.

Faculty

Chair Professor: Jong-Shenq Guo (郭忠勝)

Professors
Whei-Ching Chang Chan (張慧京); Yue-Cune Chang (張玉坤); Kung-Yu Chen (陳功宇);
Shun-Yi Chen (陳順益); Chuan-Jen Chyan (錢傳仁); Chien-Tai Lin (林千代);
Chung-Tsun Shieh (謝志村); Shio-Jenn Tseng (曾琇瑱); Chi-Chung Wen (溫啟仲);
Ting-Hui Yang (楊定揮); Yih-Huei Huang (黃逸輝)

Associate Professors
Hsiu-Fen Wu (吳秀芬); Jyh-Shyang Wu (伍志祥); Meng-Nien Wu (吳孟年);
Cherng-Yih Yu (余成義); Zhi-Shi Pan (潘志實); Chih-Chun Tsai (蔡志群)

Assistant Professors
Chian-Jen Wang (王千真); Charlotte Wang (王彥雯); Hsiang-Chun Hsu (徐祥峻)

Degree Requirements

The Department of Mathematics offers two programs at both the graduate and undergraduate levels, namely the Mathematics Program and the Data Science Program.

1. Requirements for a degree of B.Sc. in any section of Mathematics:
   Students must complete 128 credits of courses, including 77 credits of required courses (program dependent) and 30 credits of elective mathematics or data science courses.

2. Requirements for a Master’s degree in Mathematics and Data Science:
   Students must complete 24 credits of required courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for a Master’s degree in Executive Program:
   Students must complete 30 credits of required courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for a Ph.D. degree in Science:
   Students must complete 30 course credits. Students are required to pass one qualifying examination within the first five semesters and the second qualifying examination within seven semesters, publish
at least one research paper in any journal listed in Science Citation Index or Engineering Index, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

**Course Descriptions**

**Undergraduate Courses**

**Mathematics Section**

**E0767 Numerical Analysis (3/3):** Interpolating polynomials, Newton’s method, fixed point iteration, numerical differentiation and integration, Euler’s method, the Runge-Kutta method, Gaussian elimination with pivoting, the power method, Householder transformation, QR algorithm, least square approximation, orthogonal functions.

**E0595 Computer Programming (2/2):** Learning C/C++, as a prerequisite for data structures.

**E0650 Data Structures (3/3):** Basic data structures: array, linked list, tree, hash, graph, etc.

**E1967 Cryptology (0/3):** In this course, we will see how important Mathematics is in the design of cryptography. We will understand what are Symmetric-key Encipherment and Asymmetric-key Encipherment, and how they can be applied.

**M0517 Statistics (0/3):** Fundamental concepts of statistics, including estimation, testing of hypotheses and applications.

**S0024 Analysis I (3/3):** Various topics in real analysis, including measure, measurable functions, integrable functions, the Lebesque spaces, modes of convergence, decomposition of measures, and generation of measures.

**S0051 Algebra (3/3):** Basic algebra structures, including groups, rings, and algebraic field extensions.

**S0090 Vector Analysis (0/3):** Tangent, normal and binomial vector, curvature, orthogonal curvilinear coordinates, Laplacian, line integral, conservative fields, potential function, oriented surface, Green's theorem, divergence theorem, Stoke’s theorem.

**S0155 Modern Algebra (3/3):** Further studies in the structures of groups, rings, fields and Galois Theory.

**S0210 Advanced Calculus (4/4):** The number systems, topological structures of R^n, continuous functions, differentiable functions of one variable, Riemann-Stieltjes integrals, sequences and series of functions, differentiation on R^n, inverse and implicit function theorems, integration on R^n.

**S0252 Fundamentals of Mathematics (2/2):** Introduction to the basic notion of set theory; topics include axioms of set, relations, partially ordered sets, natural numbers, finite and infinite sets and logic.

**S0277 Combinatorics (3/3):** Enumeration, generating functions, recurrence relations, graph theory and networks.

**S0284 Geometry (2/2):** Study of curves and surfaces, including first and second fundamental forms, Gaussian map, Gauss-Bonnet theorem, geodesics.


**S0325 Calculus (4/4):** Limits, differentiation and integration of functions of one variable, infinite
series, functions of several variables, partial derivatives, multiple integrals.

**S0336 Computer Applications in Mathematics (2/2):** The use of computer and software packages to solve problems in mathematics.

**S0384 Applied Linear Algebra (3/3):** The application of linear algebra is wide. It includes constrained optimization, dynamical system, statistics, etc.

**S0427 Number Theory (3/3):** Number theory studies properties of integers and their generalizations. Topics to be discussed include prime numbers, divisibility, congruences, arithmetic functions, quadratic reciprocity, Diophantine equations, continued fractions, etc.

**S0439 Linear Algebra (3/3):** Vector spaces, linear transformations, matrices, eigenvalues and eigenvectors, Jordan and rational canonical forms, inner product spaces.

**S0450 Probability Theory (3/0):** Basic concepts in probability, discrete and continuous random variables, expectation, bivariate probability distributions and functions of random variables, and sampling distributions.

**S0524 Applied Mathematics (3/3):** This course uses mathematics to solve some practical problems. In particular, we focus on the solution of elementary inverse problems.

**S0579 Complex Analysis (0/3):** Analytic functions, complex integration, Cauchy's theorem, sequence and series of analytic functions, conformal mappings, and analytic continuation.

**S0737 Mathematics in Life (2/0):** Alumni are invited to speak to students and share with them the experience and challenges of pursuing careers in different areas.

**S0765 Introduction to Coding Theory (2/0):** In this course, we will introduce basic coding theory, including what are error-detecting codes and what are error-correct codes. In addition, we will introduce some codes which are being used currently.

**S0872 Community Service-Basic Mathematics (0/2):** This course is about community service for the Mathematics-major students. Students are asked to serve outside the school for about 18 hours.

**Data Science and Mathematical Statistics Section**

**B0106 Casualty Property Actuarial Analysis (2/2):** This course assists students in understanding actuarial work in insurance companies, as well as introducing actuarial theory. The course additionally motivates and guides students in their preparation for actuarial exams.

**B1602 Practice in Insurance and Finance (0/2):** This course involves cooperation between the Mathematics Department and finance/insurance businesses. Most teaching and practices are held off-campus.

**M0115 Multivariate Analysis (3/3):** Multivariate normal distribution, Hotelling’s test, MANOVA, Factor analysis.

**M0153 Operation Research (3/3):** Linear programming, the simplex algorithm, sensitivity analysis, transportation, assignment, transshipment problems, network models, integer programming, game theory, queuing theory, inventory models.

**M0202 Quality Control (3/0):** Importance of quality control, early history, Deming's philosophy, process thinking, improving a process, the seven basic tools, control charts for means, ranges, individuals, proportions and counts.

**M0264 Time Series (0/3):** Single variable time series models, estimation, ARIMA models, model building and forecasting, seasonal models.

S0061 Reliability Analysis (0/3): Reliability concepts, and statistical analysis of censored data, degradation data and accelerated life tests.

S0133 Sampling Theory (3/3): The course covers basic and standard sampling design and estimation methods and gives special attention to methods for populations that are inherently difficult to sample, elusive, rare, clustered, or hard to detect.

S0191 Regression Analysis (3/3): This is a general statistical method course designed for undergraduate students. In this course students will learn several analysis methods to analyze regression models. This course will use SAS to analyze data. We will also introduce other useful statistical methods, such as multivariate analysis and time series analysis.

S0210 Advanced Calculus (4/4): The number systems, topological structures of R^n, continuous functions, differentiable functions of one variable, Riemann-Stieltjes integrals, sequences and series of functions, differentiation on R^n, inverse and implicit function theorems, integration on R^n.

S0250 Applied Statistical Software (2/0): Introduction to data input, output, and programming using SAS and S-plus.

S0250 Introduction to Statistics (3/0): This course covers the basic concepts of statistics and its uses in daily life.

S0295 Nonparametric Statistics (3/3): This course introduces nonparametric methods and related theories.

S0325 Calculus (4/4): Limits, differentiation and integration of functions of one variable, infinite series, functions of several variables, partial derivatives, and multiple integrals.


S0582 Mathematical Statistics (3/3): Some probability concepts, random variables and their distribution, moments of random variables, characteristic function, and moment generating functions. Stochastic independence, limit theorem, transformations of random variables and random vectors, order statistics, point estimation, testing hypothesis, confidence intervals, and Quadratic forms.


S0458 Stochastic Process (3/0): the Poisson process, Markov chains, and applications.

S0487 Discrete Mathematics (3/3): Counting, logic, mathematical induction, relations, finite state machines, generating functions, and recurrence relations and graph theory.

S0722 Clinical Trials (3/3): Planning and design, basic design consideration, randomization and blinding, sample size determination, efficacy and safety evaluations.

S0733 Queuing Theory (3/3): Birth-death models, M/M/1 system, M/M/2 systems, M/G/1 system, G/M/1 system, networks of queues, and transient solutions.

S0828 Statistical Programming (0/3): This course will teach you how to use SAS Base Language, SAS Graph Language and SAS EG.

S0828 Statistical Computing (0/3): This course introduces (1) random numbers and then details how
these numbers can be used to generate random variates from discrete and continuous probability distributions; (2) various algorithms for generating such variates, including the Inverse Transformation Method, the Acceptance-Rejection Method and methods for generating normal random variates; (3) discusses problem solving using a simulation approach; (4) the analysis of simulated data; (5) variance reduction techniques; and (6) Markov Chain Monte Carlo methods.

S0872 Community Service-Basic Mathematics (0/2): This course is about community service for the Mathematics-major students. Students are asked to serve outside the school for about 18 hours.

S0951 An Introduction to Statistical Learning (3/0): Based on big data, we introduce the methods of modeling and predictions and related applications. This involves the linear regression, classifications, resampling methods, decision trees, support vector machines, etc.

S0958 Exploratory Data Analysis and Data Visualization (3/0): The course introduces techniques of exploratory data analysis and data visualization. Topics include (1) R basics and R graphics, (2) quickly exploring data, (3) getting your data into shape, and (4) dimension reduction for data visualization, etc.

S0959 The Algorithms in Data Science (0/3): This course looks at the top 10 algorithms of data mining, identified at the 2006 IEEE International Conference on Data Mining (ICDM 2006) in Hong Kong. The top 10 data mining algorithms are C4.5, k-Means, SVM, Apriori, EM, PageRank, AdaBoost, kNN, Naïve Bayes, and CART.

**Master’s Program**

**Mathematics**


S0051 Algebra (3/3): Groups and rings; free, projective and injective modules; Hom and tensor product, field extensions and Galois Theory.

S0079 Abelian Groups (3/3): Ulm's Theorem and various structure theorems, homological methods, and recent results.


S0277 Combinatorial Mathematics (3/3): Introduction to enumerative combinatorics, graph theory, and combinatorial designs.

S0320 Differential Geometry (3/3): Euclidean geometry, geometry of surfaces in Euclidean space, Riemannian geometry.

S0507 Graph Theory (0/3): This course considers such topics as planar graphs, graphs coloring domination, independence, chromatic numbers, and networks.

S0566 Ordinary Differential Equation (3/3): Existence and uniqueness, continuation, autonomous and nonautonomous systems, Poincaré-Bendixson theorem, linear and linearization, Poincaré map,
stability near equilibria and periodic orbit, bifurcation diagrams, conjugacy, and structural stability.


S0912 Introduction to Biological Mathematics (3/3): This is a cross discipline between mathematics and biology. In the course we try to answer certain biological issues by using some essential mathematical results and methods.

T0102 Seminar (1/1): This course enhances students' abilities of searching, reading, and understanding the literature of mathematics. Also students will better understand the ideas of their research. Furthermore, the students will learn skills through their poster presentation and their oral presentation.

Mathematical Statistics


M0202 Quality Control (3/3): Importance of quality control, early history, Deming's philosophy, process thinking, improving a process, the seven basic tools, control charts for means, ranges, individuals, proportions and counts, design of experiments, factorial, fictional factorial and screening designs.

S0061 Reliability Analysis (3/3): Censoring and statistical methods, life table and graphs, inference procedures for distributions of exponential, Weibull, extreme-value and other models, parametric regression models, proportional hazards and related regression models, nonparametric methods, and goodness-of-fit tests.

S0075 Statistical Application in Biology (3/3): Generalized linear models, categorical data analysis, survival analysis, nonparametric methods, with applications in various areas of biostatistics.

S0231 Advanced Mathematical Statistics (3/3): Probability theory, transformations and expectations, common families of distributions, multiple random variables, properties of a random samples, principles of data reduction, point estimation, hypothesis testing, interval estimation, and decision theory.

S0233 Advanced Probability (3/3): Topics include random walks, probability theory, random variables independence, expectation, convergence, limit theorems, conditional expectation, and Martingales.

S0264 Time Series (3/3): Autocorrelation function, stationary models, nonstationary models, seasonal models, transfer function models, and intervention models.

S0269 Statistical Methods (3/3): Regression analysis, analysis of frequency variables, introduction to time series data, CR and RCB designs, nest design, and factorial experiment.

S0295 Nonparametric Statistics (3/3): This course covers the important theoretical foundations of nonparametric statistics, both classical and current.

S0408 Experimental Designs (3/3): Factorial treatment designs, random and mixed models, complete block designs, incomplete block designs, fractional factorial designs, split-plot designs, repeated measure designs, and cross-over designs.

S0441 Linear Statistical Models (3/3): This course covers the general linear model, generalized linear model, with basic concepts, theorems, and applications.

T0102 Seminar (1/1): This course is to designed to enhance the students' abilities of searching, reading,
and understanding the literature of mathematics. Also students will get the ideas of their research. Furthermore, students learn useful skills related to their mathematical presentations.

Executive Master’s Program

S0252 Fundamentals Of Mathematics (3/3): Introduction to the basic notion of set theory: topics include axioms of set, relations, partially ordered sets, natural numbers, finite and infinite sets and logic.

S0277 Combinatorial Mathematics (3/3): Introduction to enumerative combinatorics, graph theory, and combinatorial designs.

S0395 Introduction to Algebra (0/3): Introduction of basic structure of algebra: groups, rings, and fields. Students will be able to summarize and comprehend the concepts of the basic structures of abstract algebra. Students will be able to extend the basic concepts to the level of reasoning and analysis.

S0427 Number Theory (3/0): Number theory is a branch of pure mathematics devoted primarily to the study of the integers. Number theorists study prime numbers (which, when multiplied, give all the integers) as well as the properties of objects made out of integers (such as rational numbers) or defined as generalizations of the integers.

S0439 Linear Algebra (0/3): This course is an introduction to the basic theory of linear algebra and its applications. Teaching materials are taken from papers that appeared in the journals Mathematic Education or Mathmedia or relevant books. Topics covered will be among the following: vectors and matrices, system of linear equations, linear Diophantine equations, recurrence relations, determinants, inner product spaces, linear algebra in search engine, matrices and graphs, introduction to the theory of convex sets, etc.

S0487 Discrete Mathematics (0/3): This course is concerned with the technology of counting, number theory and cryptography, and combinatorial proof.

S0507 Graph Theory (0/3): This course considers such topics as planar graphs, graph coloring domination, independence, chromatic numbers and networks.

S0845 Analysis (3/0): The real numbers, measure spaces, the Lebesgue integral, Normed spaces and Lp-spaces, Hilbert spaces.


S0847 Teaching Plans for Statistics (3/0): This course first gives a general picture of what statistics can do for us with emphasis on concepts, then discusses how to effectively teach statistics topics appearing in middle school level textbooks.

S0919 Introduction to Probability Theory (3/0): This course introduces probability and statistical inference. In the first semester, we study the basic concepts of probability, random variables, and some probability distribution models. In the second semester, the course covers the point estimation, confidence interval, and hypothesis testing for analyzing data. The analysis of variance, simple linear regression and categorical data analysis will also be included. We will also learn statistical software (R or SAS).

S0951 An Introduction To Statistical Learning (3/3): This is an introductory-level course in supervised learning, with a focus on regression and classification methods.

S0930 Exploratory Data Analysis and Visualization (3/0): This course covers various statistical tools for exploratory data analysis. Students will learn how to use R to analyze the data. Some topics are (1) descriptive statistics and R graphics, (2) data exploratory using graphics, (3) geographical data and map, and dimension reduction for data visualization.
Ph.D. Program


**S0427 Number Theory (3/3):** Algebraic integers, quadratic and cyclotomic fields, class-group and class-number, p-adic numbers, Zeta and L-functions.

**S0591 Linear Integral Equations (3/3):** Basic existence theorem, integral equations with L2 kernels, applications to partial differential equations, Fourier transforms, the Fredholm theory.

**S0576 Statistical Inference (3/3):** This course focuses on theoretical statistics. Topics include distribution theory, approximation to distributions, modes of convergence, limit theorems, statistical models, parameter estimation, comparison of estimators, confidence sets, theory of hypothesis tests, and Bayesian inference.
DEPARTMENT OF PHYSICS

Degrees Offered: B.Sc., M.S., Ph.D.

Chairman: Hung-chung Hsueh (薛宏中)

The Department

Established in 1963, the Department of Physics offers comprehensive programs for those who wish to pursue careers as scientists or engineers. We offer B.Sc., M.S., and Ph.D. degrees. In order to prepare students for a successful career in a highly competitive, high-tech world, we offer a curriculum that emphasizes the application of basic theories and extensive training in information technology and foreign languages.

The faculty members of the Department of Physics conduct research on a vast variety of topics, including theoretical and computational physics, optoelectronics, material synthesis and characterization, synchrotron radiation-related research, and nanoscience.

Faculty

Professors
Henry C. L. Chang (張經霖); Chun-nan Chen (陳俊男); Hing-tong Cho (曹慶堂);
Chao-hung Du (杜昭宏); Choon-lin Ho (何俊麟); Hung-chung Hsueh (薛宏中);
Dah-chin Ling (林大欽); Guo-chin Liu (劉國欽); Way-faung Pong (彭維鋒);
Wen-ker Tseng (曾文哲); Ping-hung Yeh (葉炳宏); Zicong Zhou (周子聰)

Associate Professors
Cheng-hao Chuang (莊程豪); Jen-yi Jen (鄭振益); Ming-hsien Lee (李明憲);
Shiow-meii Shiau (蕭秀美); Chen-yau Tang (唐建堯); Shang Yung Wang (王尚勇);
Shu-chun Yang (楊淑君)

Assistant Professors
Yi-nan Chin (秦一男); Chien-hsu Chen (陳樫旭); Chung-li Dong (董崇禮);
Jhen-youg Hong (洪振湧)

Degree Requirements

The Department of Physics offers two programs at the undergraduate level: the Electro-optical Physics Program and the Applied Physics Program.

1. Requirements for B.Sc. in Electro-Optical Physics:
   Students must complete 128 credits of courses, including 88 credits of required courses and 24 credits of elective physics courses.

2. Requirements for B.Sc. in Applied Physics:
   Students must complete 128 credits of courses, including 88 credits of required courses and 24 credits of elective physics courses.

3. Requirements for a Master's degree in Science:
   Students must complete 26 course credits, including 7 credits of required courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for a Ph.D. degree in Science:
   Students must complete 18 course credits, including 4 credits of required courses. Students are required to pass a qualifying examination within the first two years, publish at least one research paper in any journal listed in Science Citation Index, submit a written doctoral dissertation,
completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Undergraduate Courses


E0722 Electric Circuits (3/0) (0/3): Introduction to network laws and components, introduction to circuit analysis, network node voltages and mesh currents, network properties, Thevenin's and Norton's equivalent sources, operational amplifiers, equivalent circuits for three-terminal networks and two-port network.

E0961 Electronics (3/0): DC, AC, passive components, digital, analog, semiconductors, diodes, power suppliers, junction transistors, small-signal amplifiers, field-effect transistors, operational amplifiers, feedback circuits, and frequency responses.

E0868 Applied Mechanics (II) (0/3): Central-force motion, dynamics of a system of particles, dynamics of a rigid body, coupled oscillations, nonlinear oscillations (optional), motion in a noninertial reference frame (optional), continuous systems (optional).

E0969 Applied Mechanics (3/0): Coordinate transformation, matrix, vectors, Newton's Law, conservation theorems, simple harmonic oscillator, non-linear oscillations, gravitation, Euler's Equation when auxiliary condition is imposed, The Delta Notation, Lagrangian and Hamiltonian dynamics, central-force motion, dynamics of a system of particles, motion of noninertial reference frame, dynamics of a rigid body, coupled oscillations, orthogonality of eigenvectors, and continuous systems.

E1173 Introduction to Computers (3/0): Fortran is one of the oldest programming languages. It is often referred to as a scientific language and widely used in many fields of physics. We will learn the basics of programming with Fortran. And finally we will use it to solve physics problems.


S0041 Astronomy (0/3): Overview of the universe, solar system, inter-stellar distance, properties of stars, classification and evolution, star nebulae, star cluster, structure and classification of galaxies, cosmology, observatories and telescopes.

S0043 Fundamental Mathematical Physics (0/2): Introduction, reviews and concepts of functions, differentiations, vector algebra, vector differentiations, vector integrals, orthogonal curvilinear coordinates, differential equations.


S0082 Optical Electronics (0/3): The semiconductor laser, the light emit diode, detector and optical fibres.


S0125 Solid State Physics (3/0): Crystal structure, reciprocal lattice, crystal binding, phonon, free electron fermi gas, energy bands, semiconductor crystals, superconductivity, dielectrics and...
ferroelectrics, diamagnetism and paramagnetism, ferromagnetism and antiferromagnetism, magnetic resonance.

S0127 Solid State Physics (II) (0/3): Crystal structure, reciprocal lattice, crystal binding, phonon, free electron fermi gas, energy bands, semiconductor crystals, superconductivity, dielectrics and ferroelectrics, diamagnetism and paramagnetism, ferromagnetism and antiferromagnetism, magnetic resonance.


S0164 Modern Physics Laboratory (1/1): Frank-Hertz experiment, Stefan-Boltzman radiation law, electron spin resonance, Balmer series of hydrogen, fine structure, and crystallization processes.

S0203 Fourier Optics (0/3): Analysis of 2D signals and systems, foundations of scalar diffraction theory, Fresnel and Fraunhofer diffraction, wave optics analysis of coherent optical systems, frequency analysis of coherent optical systems, holography.

S0249 Fundamental Applied Mathematics (0/2): Elementary partial differentiation and total differentiation, multiple integrals, vector calculus – the directional derivative, gradient, divergence, curl, line integral, surface integral, volume integral, Gauss’ Theorem, Stokes’ Theorem, orthogonal curvilinear coordinates, linear first-order, second-order differential equation, simple partial differential equation.

S0290 General Physics (4/4): Introduction to force and motion, work and energy, conservation laws, rotation, waves, thermodynamics, kinetic theory, electricity, magnetism, Maxwell’s Equations, modern physics.

S0291 General Physics Laboratory (1/1): Basic measure, force, simple pendulum, simple harmonic motion, laws of collision, coefficient of linear expansion, mechanical equivalent, thermal-electron electromotive force, consonance, electric line of force, resistance law, oscilloscope, reflection.

S0310 Quantum Mechanics I (3/0): Introduction of probability, Schrodinger Equation, the uncertainty principle, one dimensional quantum systems, linear space and matrices, diagonalization of matrices, eigenvalues and eigenvectors, similarity transformation, central field systems, helium atoms, angular momentum.

S0312 Quantum Physics (3/3): Particle properties of waves, wave properties of particles, atomic structure, quantum mechanics, one-dimensional examples, quantum mechanics of the hydrogen atom, many-electrons atoms, molecules, and time-independent perturbation.

S0338 Electromagnetism (3/3): Electrostatic field, magnetostatic fields, boundary layer problems, material media, electromagnetic waves and radiation.

S0339 Electromagnetism Laboratory (1/1): Electronic components identification and basic circuit operations: multi-meter operations and basic DC circuits, oscilloscope operation, function generator operations, RC circuits, RL circuits, RLC circuits, diode properties, rectifier circuits and voltage doublers, clipping circuits and clamping circuits, transistors I—the NPN Transistor as a digital switch.

S0373 Digital Electronics (3/0): Digital design—binary system, Boolean algebra, logic gates, simplification of Boolean functions, combinational logic. Analog Design—amplifiers, frequency response, feedback, and operational amplifier.


S0399 Computational Materials Physics (0/3): 3D GUI and materials studio introduction, more 3D
functions and model building, crystal structures, ICSD and CSD, density functional theory, methodology and application, atomic orbits and chemical bonds, bond length, vibration frequency, lattice parameter and bulk modulus, band structure theory, semiconductor, insulator and metal, magnetic properties of materials (VCA), phonon spectra, specific heat calculation and phase transition temperature, electronic spectra, refractivity and dielectric function, IR absorption and static dielectric function, NMR and atomic structure, surface reconstruction, work-function and STM image, chemical reaction, activation barrier and free energy (Molecular dynamics).

S0437 Thermal Physics (3/0) / S0434 Thermodynamics (3/0): Temperature, simple thermodynamic systems, work, heat and the first law of thermodynamics, ideal gases, engines, refrigerators, the second law of thermodynamics, reversibility and the Kelvin temperature scale, entropy, pure substances, phase transitions, statistical mechanics, thermal properties of solids, higher-order phase transitions: critical phenomena.


S0472 Applied Electronics Laboratory (1/1): Diode characteristics, rectifier circuits, Zener regulator circuits, transistor biasing and transistor characteristics, stable operating point by-pass capacitor and incremental resistance, CE amplifier circuits, emitter follower circuit MOSFET characteristics, MOSFET amplifier circuits, differential amplifiers, operational amplifiers.


S0547 Review of Frontier Physics (0/3): Physics and philosophy, experimental physics and astronomy, theoretical physics and thermodynamics, relativity and gravity, Gondens-matter physics, high-energy physics.

S0553 Optics Laboratory (1/0) (0/1): Polarization, Fresnel diffraction, self-imaging, Fraunhofer diffraction, Faraday rotation, holography, Acousto-optical modulation, and fiber optics.

S0583 Quantum Mechanics (II) (0/3): Angular momentum algebra, addition of angular momenta, identical particle effect, one dimensional periodic quantum systems, introduction to quantum statistical mechanics, time-independent perturbation theory, finite structure, WKB approximation, variational principle, Aharonov-Bohm effect, quantum transition.


S0703 Computational Physics (3/0): Simple to complex-order differential equations, partial differential equations and boundary value problems, wave phenomena and fast Fourier transform, matrix calculations and eigenvalue problems, numerical integration, the Monte Carlo method, and molecular dynamics simulation.

S0704 Electronics Laboratory (1/1): Diode characteristics, rectifier circuits, Zener regulator circuits, transistor biasing and transistor characteristics, operating point by-pass capacitor and incremental resistance, CE amplifier circuits, emitter follower circuit MOSFET characteristics, MOSFET amplifier circuits, differential amplifiers, and operational amplifiers.


S0744 The Special and General Theory of Relativity (3/0): The principle of relativity, 4-vector and tensor; the Christoffel symbol, geodesic, Ricci tensor, Einstein’s law, Newtonian approximation, the Schwarzschild solution, gravitational red shift, deflection of light by the sun, precession of perihelia,
black hole, gravitational wave, and cosmology.

**S0770 Introduction to Opto-Electric System (0/3):** Semiconductors and their optical properties, light emitted diode (LED), solar cells, lasers, optical fiber, liquid crystal display (LCD), plasma display panels (PDP), holography, and DVDs and DVD players.

**S0819 Introduction to Statistical Mechanics (0/3):** Boltzmann statistics, Fermi-Dirac and Bose-Einstein distribution statistical method for ideal gas, heat capacity of solids, thermodynamics of magnetism, Bose-Einstein gases, Bose-Einstein condensation, Fermi-Dirac gases, free electrons in metal, information theory.

**S0829 Introduction to Quantum Information and Quantum Computations (0/3):** Principles of quantum mechanics, quantum cryptography, quantum teleportation, quantum computations, and experimental findings.

**S0835 Mathematical Methods for Physics (I) (3/0):** Probability, more on special functions, linear algebra (linear operators and Hilbert space).

**S0836 Mechanics (II) (0/3):** Central-force motion, dynamics of a system of particles, dynamics of rigid body, coupled oscillations, nonlinear oscillations (optional), motion in a noninertial reference frame (optional), continuous systems (optional).

**S0837 Mathematical Methods for Physics (II) (0/3):** Tensor analysis and differential geometry, group theory, Green’s functions, variation.


**S0868 Science Education Service(0/1) :** The student in this course will measure the air quality in the community around the campus, and analyze the data.

**S0869 Introduction to Condensed Matter Physics (0/3):** Atomic structures and bindings in solids, Defects and diffusion in a crystal, Metals and semiconductors, Mechanical and thermal properties of materials, Optical properties of materials, Electric and magnetic properties of materials, Introductions and applications of various materials.

**S0870 Introduction to Biophysics (3/0):** Introduction to important biomolecules. Applications of physical concepts, such as energy, force, entropy, temperature and free energy, biology. Diffusion and dissipation in biomaterials. Conformation and mechanical property of biopolymers.

**S0885 Introduction of Nanotechnology (3/0):** Nanotechnology is a recently developed, inter-discipline technology. It mainly explored the new physics and chemistry of the materials, which are nano-sized, and the potential of future application.

**S0893 Introduction to Optics (0/3):** The lecture will discuss about the history of optical principle. Then particle and wave theory as well as examples will briefly be introduced.

**S0914 HI-TECH Industry in Taiwan (2/0):** This course will invite experts from industry to give lectures on IC industry, LCD industry, Testing and Certification Service, Bio-medicine industry, Innovation industry, AI applications, Optoelectronics industry, etc.

**S0961 Research Project for Applied Physics (0/1):** Research for advanced energy materials and interface electrochemical activity.

**S0962 Research Project for Optoelectronics (0/1):** Each student in the course should participate in a laboratory to study the theory or experiment method about some topic of optoelectronics.

S0150 Special Topics in Physics (1/1): In this course, we give students the opportunity to conduct research on a variety of practical subject areas. Students will gain the ability to analyze and solve real-life problems, which will help them become all-rounded physicists. Furthermore, advances and discoveries in different fields of physics will also be highlighted in this course.

T0136 Special Topic Research (1/1): Through the course the students may participate in various research activities in our Department, gain practical hands-on experience to do research, and extend their basic knowledge in physics to realistic applications.

Master's Program

S0064 Classical Mechanics (3/0): Survey of the elementary principles, variational principles and Lagrange's equations, the central force problem, the rigid body motion, small oscillations, special relativity in classical mechanics, the Hamilton equations of motion, canonical transformations, Hamilton-Jacobi theory, canonical perturbation theory, introduction to the Lagrangian and Hamiltonian formulations for continuous systems and fields.

S0267 Statistical Mechanics (I) (0/3): Classical Statistical Mechanics, micro-canonical ensembles, canonical and grand canonical ensembles, quantum statistical mechanics, Fermi systems, Bose systems.


S0335 Electrodynamics (3/0): Introduction to electrostatics, boundary-value problems in electrostatics I, boundary-value problems in electrostatics II, multipoles, electrostatics of macroscopic media, dielectrics magnetostatics, time-varying fields, Maxwell equations, conservation laws, plane electromagnetic waves and wave propagation, wave guides and resonant cavities, simple radiation systems.


S0630 Introduction of Synchrotron Radiation (0/3): This lecture gives a description of the x-rays produced by a synchrotron radiation source and its applications in modern material research.

S0666 Electrodynamics (I) (0/3): This course introduces the basic theory and applications of classical electrodynamics.

S0771 Atomistic Simulation of Optoelectronic Materials (3/0): Computational material science, theory of solid-state physics, density functional theory, pseudopotential, band theory, dielectric function and optical properties calculation, phonon calculation, many-body perturbation theory.
S0795 **Physics of Nano-materials and Their Application** (0/3): This course introduces nanotechnology and its potential application; we start with the general characteristics of nano-materials and their application, followed by description of the structure of nanomaterials; characterization technology for nano-materials, including scanning tunneling microscopy and transmission electron microscopy; and fabrication & properties of the nano-materials, that include (a) zero dimension materials and applications, such as quantum dot semiconductors, single electron transistor; (b) one dimension nano-materials, such as carbon nanotubes, ZnO-nanowires; and (c) two one dimension nano-materials, such as quantum well semiconductor and graphene.

S0855 **Selected Topics in Physical Mathematics** (3/0): Selected Topics in Physical Mathematics is a one-semester elective course for M.Sc. students in physics. It introduces some of the advanced mathematical methods that are frequently used in the analysis of physical problems and experimental data. Topics include: complex analysis, probability, and statistics.

S0856 **Condensed Matter Physics** (3/0): This course is designed to cover the foundations of atomic structure, electronic structure, transport/optical/thermal properties of solids and magnetism at the graduate level. A basic knowledge of Quantum and Statistical Mechanics is required.

T0095 **Seminar (I)** (2/2): Students learn what people are doing in physics through the talks given by experts working in different fields of physics.

T8000 **MS Thesis** (0)

S0973 **Many-Body Physics** (0/3): Among the most fertile areas of modern physics, many-body physics has produced a wealth of fundamental results in all areas of disciplines. This lecture will cover the introduction of the many-body problem, Feynman diagrams, quasiparticle, second quantization, Green's function method, and Dyson's equation.

**Ph.D. Program**

T0096 **Seminar (II)** (2/2)

T8000 **Thesis** (0)
DEPARTMENT OF CHEMISTRY

Degrees Offered: B.S., M.S., Ph.D.

Chairman: Tzenge-lien Shih (施增廉)

The Department

The Department of Chemistry was established in 1958 and offered degrees in pure chemistry and applied chemistry in 1974. In 2003, the chemistry department officially provided degrees in two divisions: chemistry and biochemistry division as well as material chemistry division. The department is located in and is the sole occupant of the Chung-Ling Chemistry Hall, which was built in 1999. In this state-of-the-art building, we have a library, laboratories, teaching classrooms, and a precision instrument center. With these facilities, students have a great opportunity to gain hands-on experience using modern equipment. Moreover, the low student to faculty ratio allows for a closer student-teacher interaction, better student guidance, and more research opportunities.

The MS and Ph.D. programs in chemistry were established in 1971 and 1975, respectively. The main goal of both programs is to provide each graduate with the intellectual background, laboratory skills, and research experience necessary to ensure success in his or her future scientific endeavors. Hence, our faculty endeavors to research projects that encompass all of the major disciplines of chemistry, with special emphasis on material chemistry and biochemistry. Meanwhile, students are encouraged to participate in the department’s numerous research programs. Due to their extensive interdisciplinary training, TKU science graduates hold competitive positions in both local and overseas universities, as well as in industry and government laboratories across the nation and worldwide.

Faculty

Professor Emeritus
Yun-shan Lin (林雲山); Ho-hsiang Wei (魏和祥); Chia-li Wu (吳嘉麗)

Professors
Shih-yuan Lee (李世元); Jyh-shing Lin (林志興); Meng-shan Lin (林孟山);
Bo-cheng Wang (王伯昌); Hsiu-fu Hsu (徐秀福); San-lang Wang (王三郎);
Yau-hung Chen (陳曜鴻); Tzenge-lien Shih (施增廉); Jen-Chieh Hsieh (謝仁傑)

Associate Professors
Tzu-chao Chuang (莊子超); Ming-kai Chern (陳銘凱); Chang-shin Lee (李長欣);
Chun-hung Wu (吳俊弘); Jin-pei Deng (鄧金培); Po-Shen Pan (潘伯申);
Chih-hsin Chen (陳志欣)

Assistant Professors
Chung-Hung Hsieh (謝忠宏); Teng-Hao Chen (陳登豪); Min-Yeh Tsai (蔡旻燁)

Degree Requirements

The Department of Chemistry offers two programs at the undergraduate level: the Biochemistry and Material Chemistry programs.

1. Requirements for a degree of B.Sc. in Biochemistry:
   Students must complete 128 credits of courses, including 108 credits of required courses and 18 credits of elective chemistry courses.

2. Requirements for a degree of B.Sc. in Material Chemistry:
   Students must complete 128 credits of courses, including 108 credits of required courses and 18 credits of elective chemistry courses.

3. Requirements for a Master's degree in Science:
   Students must complete 28 credits of courses, including 16 credits of required courses and 4 credits

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of seminar courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for a degree of Ph.D. in Science:
Students must complete 26 credits of courses, including 19 credits of required courses and 4 credits of seminar courses. Students are also required to pass a qualifying examination within the first three years, publish at least two research papers in any journal listed in Science Citation Index, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Undergraduate Courses

E0182 Material Science (0/3): Introduction to basic concepts of the fabrication and structure-property relationship of materials, including ceramics, polymers, porous materials, electrical and magnetic materials, supramolecular and nano materials, etc.


S0018 Special Topics in Analytical Chemistry (3/0): This course covers the fundamentals of electrochemical methods and modern applications.

S0068 Biochemistry (3/3): Molecular design of life, protein conformation, dynamics and function, metabolic energy, biosynthesis of macromolecules, gene replication and expression.

S0071 Biochemistry Laboratory (0/1): SDS polyacrylamide gel electrophoresis, protein determination, determination for enzyme activity, HPLC for sugar analysis, TLC for brain glycosphingolipids, hemagglutination, enzymic conversion for "B" RBC into "O" RBC polymerization chain reaction experiment.

S0076 Biology (3/3): Molecular biology of genes, gene regulation, DNA technology, blood, the immune system, hormones, and the nervous system.


S0111 Organic Chemistry Laboratory (1/1): Separation and purification of organic compounds, reaction of alcohols, preparation of cyclohexanol, and nitration of aniline: using a protecting group.

S0113 Organic Reaction Mechanism (3/0): Principles of stereochemistry, conformational, steric, and stereoelectronic effect, SN1, SN2, polar and elimination reaction of carbonyl cpds, aromaticity, aromatic substitution, controlled pericyclic reaction.

S0143 Physical Chemistry (3/3): Quantum chemistry, thermodynamics, kinetics.

S0147 Special Topics in Physical Chemistry (3/0): Laws of thermodynamics, Joule expt., Joule-Thomson expt., entropy, heat capacity, free energy A and G, temperature era, statistical thermodynamics, partition function, equipartition theory, the Einstein solid and the Debye solid.

S0148 Physical Chemistry Laboratory (1/1): Intrinsic viscosity, transference number, cryoscopic determination of molecular weight, chemical equilibrium, heat of combustion, binary liquid-vapor
phase diagram, and ionic strength effect.

S0178 Food Chemistry (3/0): Protein chemistry, carbohydrate chemistry, lipid chemistry, vitamin and cofactors, milk products, browning reaction, food microbiology.

S0195 Polymer Chemistry (3/0): Mechanisms of polymerization, synthesis of polymers, characterization of polymers, physical and chemical properties of polymers, and commercial polymers.

S0288 General Chemistry (3/3): Atomic structure, chemical bonding, molecular structure, chemical kinetics, chemical thermodynamics.

S0289 General Chemistry Laboratory (1/1): The following experiments have been designed to train students in related experimental techniques: preparation of soaps, synthesis of aspirin, ion analysis, the study of chemical equilibrium, DNA agarose gel electrophoresis, preparation of high-Tc superconductors, electrogravimetric analysis, chemical cells, preparation of buffer solutions, ion exchange chromatography, COD, DO, Karl Fischer analysis, volumetric titrations including acid-base titration, precipitation titration, complex formation titration, and oxidation/reduction titration.

S0297 Inorganic Chemistry (3/3): Atomic structure, solid-state chemistry, chemical bonding, coordination chemistry, organometallic chemistry, acid-base and solution chemistry, group theory.

S0299 Special Topics in Inorganic Chemistry (3/0): Conformation and stereochemistry, nucleophilic substitution and electrophilic substitution, cycloaddition and rearrangement, organometallic reactions, reactions of carbonyl compounds, peptide synthesis, radical reactions.

S0299 Special Topics in Inorganic Chemistry (0/3): Quantization and Schrodinger equation, one particle in a box and its applications, Hückel theory and its applications, extended Hückel theory and its applications, and Ab initio computational methods.

S0311 Quantum Chemistry (3/0): Schrödinger equation, quantum mechanics, particle in a box, symmetry, molecular orbitals.

S0324 Microbiology (0/3): Bacteria, fungus and diseases, viruses and cancers, immunity, bacterial growth and control, industrial microbiology.

S0416 Instrumental Analysis Laboratory (1/1): The applications of AA, IR, GC, UV-VIS, HPLC, NMR, and MS.

S0415 Instrumental Analysis (3/3): Conductometric analysis, potentiometric methods, voltammetry, GC, HPLC, spectrofluorometer, mass spectrometry, nuclear magnetic resonance spectroscopy, capillary electrophoresis.

S0454 Biosensors and Bioelectronics (0/3): This course focuses on biosensors, a specially designed measurement tool with an inherited specificity from bio-components suitable for the measurement of a particular target from a complex sample such as blood or environmental samples.

S0456 Special Topics in Biochemistry (3/0): Selected topics in cells, enzyme, proteins, lipids, carbohydrate chemistry, biological membrane, glycoconjugates and their functions.

S0573 Special Topics in Analytical Chemistry (3/0): An introduction to chromatographic separations: band broadening and column efficiency, the Van Deemter equation, gas chromatography, high performance liquid chromatography and supercritical fluid chromatography (SFC).

S0585 Special Topics in Polymer Chemistry (3/0): Selected topics in manufacturing, properties and applications of natural and synthetic rubbers, processing techniques of rubbers, testing of uncured and cured rubbers, compounding ingredients of rubber compounds.

S0650 Special Topics in Organic Chemistry (3/0): Conformation and stereochemistry, nucleophilic substitution and electrophilic substitution, cycloaddition and rearrangement, organometallic reaction, reactions of carbonyl compounds, peptide synthesis, radical reactions.
S0708 Chemical Applications in Group Theory (3/0): Molecular symmetry, symmetry group, representations of groups, group theory & quantum mechanics, symmetry-adapted linear combinations, Ligand field theory, molecular vibrations, molecular electronic structure, molecular orbital theory.

S0709 Genetic Engineering (0/3): The basic principles of gene cloning and DNA analysis: restriction enzymes, recombinant vector transformation, screening, polymerization chain reaction, gene sequencing, DNA purification and gene expression.

S0729 Applications of Chemistry (2/0): Hydrogen bonding, roles of carbon, roles of silicon, life science, electronics, optoelectronics, material science.

S0736 Spectroscopy of Molecules (0/3): Review of quantum mechanics (particle in a box, rigid rotor and harmonic oscillator), transition probability, UV-vis—IR, vibronic, Franck-Condon principle, rotation-vibration, PQR branches, symmetry and spectroscopy.

S0777 Molecular Biology (0/3): The central dogma: replication, transcription and translation, DNA structure and stability, the dynamic genome, recombinant DNA and nucleic acid technology, bacteriophage, plasmid and transposable elements, protein engineering, human genetics, program cell death, oncogenes & tumor suppressor genes.

S0781 Introduction to Biology (0/3): Cell life, cellular reproduction and genetics, concepts of animal structure and function, concepts of plant structure and function.


T0102 Seminar in Chemistry (1/0): Selected topics for undergraduate students.

T0136 Undergraduate Chemistry Research (1/1): Selected research topics for undergraduates.

Master's Program

S0202 Advanced Analytical Chemistry (3/0): Advanced treatises on theory and applications of UV, IR, Raman, NMR, ESR, Mossbauer, and ESCA GC/MS.

S0209 Advanced Organic Analytical Chemistry (3/0): Elucidation of chemical structures by physical and chemical methods.

S0211 Advanced Organic Chemistry I (3/0): Chemical bonding, molecular structure and orbitals, stereo chemistry and conformation analysis, linear free energy relationship, kinetic isotope effects.

S0212 Advanced Organic Chemistry II (0/3): Photochemistry, free radical reaction, carboniums, carbonium and reaction mechanisms.

S0223 Advanced Physical Chemistry I (3/0): Quantum chemistry, applying group theory, introduction to spectroscopy.

S0224 Advanced Physical Chemistry II (0/3): Chemical kinetics and thermal statistics.

S0226/S0227 Advanced Inorganic Chemistry I/II (3/3): Symmetry groups are of great importance to chemical applications. This course will include the essential mathematics of group theory; the applications of group theory to chemical bonding, stereochemistry, spectroscopy, and symmetry-controlled chemical reactions will be covered.

S0674/S0696 Advanced Analytical Chemistry I/II (3/3): An introduction to chromatographic separations, gas chromatography, high-performance liquid chromatography, supercritical fluid chromatography and extraction, capillary electrophoresis and capillary electrochromatography.

S0851/S0852/S0853 Advanced Life Science I/II/III (3/3): This course introduces the basic concepts of cell-cell interaction, early development, late development, and organogenesis. This course will help graduate students understand the mystery of life.

T0095/T0096 Seminar in Chemistry (2/2): Selected topics for graduate students.

T1002/T1003 Seminar in Chemistry (2/2): Discussion of current topics in all fields of chemistry.

T8000 MS Thesis (0/4)

**Ph.D. Program**

S0124 Solid State Chemistry (3/0): This course introduces crystal structure, bonding in solids, X-ray diffraction, materials characterization, phase diagrams, electrical properties, and magnetic properties.

S0213 Advanced Organic Synthesis (0/3): Synthesis of organic compounds emphasizing modern reagent and methods, applications of Umpolung to organic syntheses.

S0214 Special Topics in Advanced Organic Chemistry (0/3): Advanced treatises on photochemistry, free radical reaction, carbanions, and carbonium and reaction mechanisms.

S0219 Special Topics in Advanced Physical Chemistry I (3/0): Statistical thermal dynamics, applications of theoretical methods in chemistry, applications of quantum chemistry in molecules.

S0222 Special Topics in Advanced Physical Chemistry IV (0/3): Liquid crystals, anisotropy of physical properties, materials: thermotropic low molar mass, thermotropic polymer, lyotropic, rod-like, disc-like, bowl-like, banana, phase structure: nematic, smectic, chiral, columnar, calamitic, banana, theory of nematic and smectic phases, order parameter, ferroelectric LC, antiferroelectric LC, TGB phase, applications of LC, TN, STN, FLC, PDLC.

S0229 Special Topics in Advanced Inorganic Chemistry II (0/3): Supramolecules and molecular nanotechnology of transition metal complexes, biological inorganic chemistry.


S0219 Special Topics in Advanced Physical Chemistry I (0/3): Crystal chemistry, bonding in solids, materials characterization, physical and chemical properties of materials, preparation of materials.

S0706 Special Topics in Advanced Physical Chemistry II (0/3): NMR theory, spin dynamics, relaxation dynamics, NOE.

S0706 Special Topics in Advanced Physical Chemistry II (0/3): Nuclear spin dynamics.

S0710 Organometallic Chemistry (3/0): Organometallic chemistry: basic concepts in coordination compounds, ligands, reactions, characterizations, catalysis, metathesis and polymerization, applications to organic synthesis, clusters, applications in chemical vapor deposition, bioorganometallic chemistry.

S0808 Protein NMR technique (0/3): Nuclear spin, Pulsed FT NMR, NOE, Protein NMR structure, Protein MR dynamics.

T0096 Doctoral Seminar (2/2)

T8000 Doctoral Dissertation (4)
BACHELOR’S PROGRAM
IN ADVANCED MATERIAL SCIENCES

Degrees Offered: B.S.

Chairman: Yau-hung Chen (陳曜鴻)

The Department

The Bachelor’s Program in Advanced Material Sciences was established in 2015. The main goal of this program is to provide students with opportunities to understand basic concepts of advanced material sciences, including nanomaterial, biomedical material, optoelectronic material and macromaterial. The faculty members of the Bachelor’s Program in Advanced Material Sciences conduct research on a vast variety of topics, including theoretical and computational physics/chemistry/biology, optoelectronics, material synthesis, organic and analytical chemistry, biotechnology, cell biology and nanoscience. Our objective is to foster in students cross-field and multidisciplinary abilities in their material sciences expertise.

Faculty

All the faculty members in College of Science are considered as faculty of Bachelor’s Program in Advanced Material Sciences.

Degree Requirements

Students must complete 128 credits of courses, including 84 credits of required courses and 20 credits of elective courses.

Course Descriptions

Undergraduate Courses


S0289 General Chemistry Laboratory (1/1): The following experiments have been designed to train students in related experimental techniques: preparation of soaps, synthesis of aspirin, ion analysis, the study of chemical equilibrium, DNA agarose gel electrophoresis, preparation of high-Tc superconductors, electrogravimetric analysis, chemical cells, preparation of buffer solutions, ion exchange chromatography, COD, DO, Karl Fischer analysis, volumetric titrations including acid-base titration, precipitation titration, complex formation titration, and oxidation/reduction titration.

S0290 General Physics (3/3): Introduction to force and motion, work and energy, conservation laws, rotation, waves, thermodynamics, kinetic theory, electricity, magnetism, Maxwell’s Equations, modern physics.

S0291 General Physics Laboratory (1/1): Basic measure, force, simple pendulum, simple harmonic motion, laws of collision, coefficient of linear expansion, mechanical equivalent, thermal-electron electromotive force, consonance, electric line of force, resistance law, oscilloscope, reflection.

S0325 Calculus (3/3): Limits, continuity, differentiation of functions of one variable, mean value theorem, applications of differentiation, integration of functions of one variable, fundamental theorem of calculus, applications of integration, infinite series, functions of several variables, limits and continuity, partial derivatives, applications of maximum and minimum, multiple integrals, Fubini's theorem.
S0398 Applied Electromagnetism (3/0): This course considers topics such as vector analysis, electrostatics, energy and potential, electrostatic fields in matter (conductor and dielectrics), capacitance, magnetostatics.

S0931 Introduction of Materials Science (2/0): Atomic bonding, solid state structure, mechanical property, electrical property, magnetic property, optical property, applications of materials.

S0932 Fundamental Biology (0/3): Molecules of life, Cell and cellular organelle, Cell and energy, Gene and inheritance, Introduction to biotechnology.

S0938 Biomedical Material (0/3): Types of biomedical materials, natural biomacromolecules, protein structure and function, modification of glycoprotein, induction and purification of protein, biocompatibility of materials, toxicity tests of materials, application of biomedical materials.

S0939 Nanoscience (0/2): This course will introduce how nanoscience has developed, been applied and analyzed. Why do human beings need nanoscience or nanomaterials? How do scientists find nanostructures and how do they investigate to control nanoscience?

S0940 Structure and Measurement of Material (2/2): In the first semester, we study optical microscopy (absorption, transmission, reflection, and application), Raman microscopy (Raman scattering and application), electron microscopy (electron-matter interaction and application), synchrotron-related technology, x-ray microscopy (x-ray focusing principle and application), x-ray powder diffraction (Bragg diffraction and application), atomic force microscopy (Van der Waal’s force and application), scanning transmission microscopy (quantum transportation and application), electrochemical microscopy (redox current transport and application). During the second semester we consider molecular spectrometry (molecular absorption spectrometry, molecular luminescence spectrometry), nuclear magnetic resonance spectroscopy, molecular mass spectrometry, separation methods (gas chromatography, liquid chromatography).

S0941 Material Science Experiment (I) (1/1): In the first semester, we study buffer preparation, osmosis and dialysis, protein chemistry and gel electrophoresis, polymerase chain reaction, measurement of protein amount, measurement of enzymatic activity, isolation and purification of plasmid DNA, immunohistochemistry. In the second semester, we study preparation of buffer systems, osmosis and dialysis, protein chemistry and electrophoresis, quantitative determination of protein, determination of enzyme activity, isolation of plasmid DNA, and chemistry of cell membranes.

S0942 Methods in Material Research (2/2): This course considers topics and experiments in studying material sciences, including nano, biomedical, macromolecular and optoelectronic materials. Students can enter the material-related laboratories to do some specific topics under the instruction of the principal investigator.

S0943 Material Science Experiment (II) (1/1): In the first semester, students will learn the basic organic chemistry laboratory skills through practicing hands-on experiments. The experiments involved in this course will cover a series of synthetic reactions that could be further utilized in making a wide variety of organic materials. The second semester of this course also allows students to personally perform experiments relating to the major principles of material science that they have learned from the lecture. Specifically, for instrumental analysis, students will learn how to use UV-Vis spectrometer, fluorescence spectrometer, IR spectrometer, gas chromatography, high performance liquid chromatography and cyclic voltammetry.

S0944 Advanced Experimental Techniques (1/1): This course aims to integrate skills/tools used in data analysis and scientific report, with key features of academic writing, to help students build up a knowledge of experimental data analysis and thesis writing.

S0945 Thesis (0/0): This course will be focusing on reading, writing and paper discussion. The final goal of this course is to let students complete their own thesis.

S0966 Electronic Circuits (I) (3/0): This course is concerned with direct and alternating currents, passive components, digital and analog mechanisms, semiconductors, diodes, power suppliers, junction
transistors, small-signal amplifiers, field-effect transistors, operational amplifiers, feedback circuits, and frequency responses.

**S0986 Synthesis of Materials (0/3):** This course will be focusing on stereochemistry, chemical reactivity and reaction mechanisms. In addition, alkene related reactions, alkyne related reactions, and radical related reactions, will also be included.

**S0987 Design of Materials (3/0):** Students will be introduced to the working principles of organic optoelectronic devices, which includes OLED, OPV and DSSC. The design principles and synthetic strategy for organic materials used in OLED, OPV and DSSC.
LIFE SCIENCE DEVELOPMENT CENTER

Director: Wang, San-lang (王三郎)

The Life Science Development Center, established in August 2002, is a research and development body affiliated with the TKU Office of Research and Development. Its research straddles a number of professional domains, including biotechnology, applied microbiology, molecular biology, and neuroscience. Its functions are similar to that of Nanotechnology Research Center: it trains scientists and engineers in a range of disciplines, integrates research-related resources, coordinates research teams both on and off campus, and hosts regular seminars and forums to promote multidisciplinary and collaborative research projects. The Center’s long term objective is to nurture and train interdisciplinary research scientists and engineers to meet future demand.

SCIENCE EDUCATION CENTER

Director: Bo-Cheng Wang (王伯昌)

The main project of the Center for Science Education is to uphold the ideas of the “International Year of Chemistry 2011” by continuing the work of making chemistry available to as many students as possible, especially in underprivileged areas around Taiwan. Project “Chemistry On The Go” converted a 3.5 ton box truck into a Mobile Lab and goes to junior high schools in every county and city in Taiwan to introduce chemistry to the students through magic shows, commentaries, mini-lectures, demonstrations, and hands-on experiments. The center also holds the “Science Festival” every summer for junior and senior high school students. The team of Visible Light services holds week-long activities in inner city schools as well as remote mountainous area schools to stimulate students to develop an interest in science.

RESEARCH CENTER FOR X-RAY SCIENCE

Director: Du, Chao-Hung (杜昭宏)

The “Research Center for X-ray Science” was founded in October of 2015. Synchrotron x-ray is one of the most powerful probes for the research of material science. It has been used to unveil the physical and chemical properties of materials down to the atomic scale, and leads to the many innovations in functional materials and industrial applications. Study of the physical properties of materials using synchrotron x-ray has been a long-standing research field in the Department of Physics, Tamkang University, and has also achieved a very good reputation in the related researches in Taiwan, even around the world. Many of faculty members and graduated students have also devoted themselves to the planning and construction of the latest synchrotron research facility (named as Taiwan Photon Source) which is being built by NSRRC (National Synchrotron Radiation Research Center, Taiwan), and provides the most brilliant photon source and superior instruments to researchers around the world. Prof. Pong is also in charge of the construction of an advanced high-resolution x-ray spectrometer for the use of material research. In order to strengthen the material research using synchrotron photon source, the Department of Physics proposed to establish a research center named as “Research Center for X-ray Science” in the year of 2015 by integrating the faculty members in the fields of material research, computation physics, and nano-material. The goals of the Center are not just on the research, but also on education. The Center organizes annually one or two meetings and workshops on a selected research topic, also provides a platform to students, researchers, and faculty members to learn and exchange the latest knowledge and techniques in their related fields.
COLLEGE OF
ENGINEERING
COLLEGE OF ENGINEERING

Dean: Hui-huang Hsu (許輝煌)

Brief History
Since its establishment in 1966, the College of Engineering has undertaken the mission of training talented engineers. It became a fully-developed college in 1980. The period between 1980 and 1996 was the booming stage of development for the College of Engineering, during which its steady growth was made possible by the support of the university. This stage witnessed an increase in the number of department faculty, the completion of the Engineering Building, the renewal and enhancement of facilities and equipment, and the development of modern computer networks. In recent years, the College has admitted and educated more and more international students and developed several dual-degree programs with renowned universities in other countries like Japan, Australia, USA, India and Malaysia. Today, the college continues to conduct curriculum reform, promote academic research cooperation and exchange, and above all, serve as the cradle of elite engineers nationwide.

There are eight departments in the College of Engineering: Architecture, Civil Engineering, Water Resources and Environmental Engineering, Mechanical and Electro-Mechanical Engineering, Chemical and Materials Engineering, Electrical and Computer Engineering, Computer Science and Information Engineering, and Aerospace Engineering. All the undergraduate and graduate programs have been accredited by the IEET (a full signatory of the Washington Accord) and that certainly will offer our graduates greater employment opportunities for their promising career. The college provides students with more than 70 modern teaching and research laboratories, including multi-media and CAE laboratories, to assist students in learning and practicing, and support the needs for education and academic research. These laboratories are well equipped and professionally maintained by specialized technical staff. Meanwhile, the College of Engineering’s major task is to promote curricula taught entirely in English, to enhance academic collaboration and exchange with universities outside Taiwan, and to continuously pursue excellence in engineering education and innovative research.

Motto and Goals
Quality Teaching and Leading-edge Research.

Future Development
1. Recruit both distinguished professors and talented young scholars to take the teaching and research efforts in the College to a higher level.

2. Reform the curriculum to provide more flexibility to meet the needs of various kinds of students.

3. Encourage cooperation with industry in both cooperative projects and student training.

4. Invite eminent international scholars to offer intensive courses or cooperative research projects and encourage faculty members to visit prestigious organizations or universities in the world to facilitate bilateral cooperation.

5. Promote student exchange and dual-degree programs and admit more international students to establish an internationalized atmosphere in the College. Cross-Strait academic and technological research/exchange and scheduling faculty and students to visit well-known universities in China to realize TKU’s goals of globalization and future-oriented education.

The College of Engineering will maintain its status as a leading college and work on establishing a solid foundation for future development, while constantly enhancing its standard of research and instruction. Faculty members in the College of Engineering possess extensive experience, and the College itself is equipped with cutting edge facilities to assist students achieve their ultimate learning objectives.

Course Descriptions

Undergraduate Courses

E0033 Engineering and Environment (2/0): Major environmental issues facing modern engineering
are addressed in this class. Class content includes global environmental issues, environmental impact assessment practices, an introduction to the ISO14000 environmental management system as well as green design, green engineering, ecological engineering and green architecture.

E3405 Energy-Efficient Lighting Technology (2/0): This course introduces the energy-efficient lighting technology. The revolution of lighting will be discussed in depth and width, also including the new technologies of energy conservation and future development, especially for LED.

E1402 Engineering Ethics (2/0): To increase interaction between engineers and related professionals in a contemporary environment, engineering ethics has become very important. This course is intended to equip engineering students with a better ability to make ethical decisions about creating and marketing new technologies in their future professional work.

E3230 Art, Green-energy and Environment (0/2): This course studies the relationship between public art, urban public space, and the influence of green energy on the quality of the urban environment. On field trips, students visit sites that feature creative art pieces as a form of studying public art. In addition, the concept of green energy will be introduced as a solution for carbon-constraints. For the final presentation, students will be required to build realistic models in groups.

E1670 Topics on Micro-Electro-Mechanical Systems (2/0): This course describes how newly developed technology links the macroscopic world with nano scaled matters. Course content includes brief descriptions of semiconductor processing, silicon micro-machines, non-silicon micro-machines, the low temperature (polymer MEMS) process, micro-sensors, micro-actuators, microfluidics, and BioMEMS applications.

E1679 Introduction of Artificial Neural Network (0/2): This course introduces the applications of neural networks. The configuration of neural networks includes single-layer neural networks, multi-layer neural networks, backpropagation neural networks, radial basis function neural networks, self-organized neural networks, fuzzy neural networks and recurrent neural networks. Various learning algorithms, such as back-propagation, 1st order gradient descent, and 2nd order gradient descent are also introduced.

E2267 Reliability and Risk Analyses (0/2): Failure concepts, fault tree analysis, reliability block diagrams, system structure analysis, risk concepts, risk criteria, risk assessment, risk assessment techniques, probabilistic risk assessment, uncertainty, risk characterization using logic trees.

E2638 Introduction to Energy Engineering (0/2): This course offers an introduction to the use of energy in society and the importance of rational and efficient usage for both primary and secondary energy conversion. Both depth (the technology) and width (the social perspective) are discussed.

E2725 Chemical and Material Industries and Future Technology Developments (0/2): This course introduces the applications and future developments of chemical and materials engineering technology in various industries, such as food, biomedical fine chemicals and semi-conductor thin film transistors.

E2727 Aerospace Industry in the 21st Century (2/0): This is a general introduction to the aerospace industry. Students will gain topical knowledge through classroom presentations and team work.

E2887 Embedded System Programming Design (0/3): This course covers the following topics: introduction to embedded systems, building and running programs for embedded systems, thread synchronization on embedded systems, optimizing embedded software for size, speed and power consumption, and practical examples of embedded systems, such as audio/video processing.

E2949 Architecture Industry Trends in the 21st Century (2/0): This course covers the development of the architecture industry in the 21st century, including architectural design and planning, building technology, sustainable architecture, environmental issues, landscape and urban design.

E3204 Industrial Trend of Me2 in the 21st Century (0/2): This class will help students develop an awareness and understanding of ten key trends in the electromechanical industry and provide insight into the product development policy of the 21st century. It offers an in-depth view of product innovation in the electromechanical industry through lectures, group discussions, and case studies.
E2953 Introduction and Implementation of Embedded Systems (3/0): This course introduces the following topics: an overview of embedded systems, the basic operations for Linux programming, development tool chains, basic embedded system programming, and hands-on experience in embedded experiment boards with ARM series CPUs.

E3124 Operation System and Technologies for Natural Hazard Mitigation (0/2): Natural hazards, like typhoons, earthquakes, floods, droughts, debris flows, and landslides often cause major disasters in Taiwan. The general public has long been concerned about these hazards. Many believe that effective countermeasures must be based on a strong technical foundation, so that damage and losses from these hazards may be mitigated. The National Science and Technology Center for Disaster Reduction (NCDR) was founded in 2003 to oversee work conducted in this area. This course introduces numerous strategies and methodologies employed by the NCDR and other related organizations. The technologies currently used and those still under development will be discussed so that students may better understand the ongoing issues.

E3232 Introduction to Green Electronics (2/0): This course covers solar power, wind power, and smart grid, while other related technologies and global market development cases are also discussed. The latest cases in the areas of new energy, communication control, automotive electronics, and batteries are also explored, enabling students to better understand issues related to green energy.

M0022 Engineering Economics (2/0): This course covers the following subjects: equivalence and interest formulas; extending equivalence to real world transactions; present worth, annual worth and future worth analysis; rate of return analysis; depreciation; income taxes; inflation and economic analysis.

S0238 Partial Differential Equations (0/2): This course is an introduction to Partial Differential Equations, which covers various types of equations, such as parabolic, elliptic, hyperbolic, homogeneous, and non-homogeneous equations. Techniques used for solving the problem, including separation variables, Fourier as well as Laplace transforms, and Eigenfunction expansions are also covered.

E2966 The Trend of Information and Communication Technologies (0/2): This is a seminar course for undergraduate students related to Information technology, but not limited. The majority of invited speakers are working in different information-technology industries. The objective of this seminar course is to provide the preparation of starting to work after graduation and understand what the necessary hard skills and soft skills in IT-based companies and industries are.

M0286 Project Management (0/2): In these times of the knowledge economy, the management methods of functional organizations cannot manage the multiply-changed environments anymore. It’s inevitable that enterprises will use project management to solve problems. Project management is good for students’ self-management ability, can help them integrate what they have learned to solve problems, and is good for cultivating students’ systems thinking. If students could learn basic project management knowledge during their study and put it into practice, it is certain that their ability will be promoted when applying for future jobs.

E2951 Software Applications for Engineering Statistics (0/2): This course is designed to train students to understand the knowledge of engineering statistics and with its applicability to engineering with statistical software.

E3203 The Development of Environmental and Water Resource Problems (2/0): The extreme weather conditions seem deteriorating both in frequency and intensity, based on the incidences and data collected in many places worldwide. This course introduces: first, evolving environmental risks in the world, including water resources, food, and ecological crises; second, Taiwan’s poor geological state and unsustainable development that causes loss of life and huge financial costs annually, third, governmental initiatives, such as regulating policies and risk management strategies.

E3580 Innovation and Entrepreneurship (2/0): This course aims to educate students in understanding different types of business administration and to enhance the innovation and creativity of students’ thinking ability in business marketing strategy.
E3650 Ocean Technology and Environment (2/0): This course introduces the basic properties of the oceans, and the principles of key ocean technologies, so as to better understand the balance between ocean development and its protection. Many issues relevant to coastal waters surrounding Taiwan are discussed, allowing students to fully understand the special properties of the local marine environment.
DEPARTMENT OF ARCHITECTURE

Degrees Offered: B. Arch., M. Arch.

Chairman: Fu-kuo Mi (米復國)

The Department

The undergraduate program was established in 1964. It offers a five-year program that aims to educate creative and socially responsible professionals who may then go on to design people-friendly environments. The graduate program, established in 1981, is a two-year program that offers three sub-programs: the design sub-program, the theory sub-program, and the technology sub-program. The design sub-program requires students to create a design model, while the other two sub-programs require a written thesis.

Faculty

Professor Emeritus
Chi-kung Wang (王紀鯤)

Visiting Professors
Hideki Hirahara (平原英樹)

Professor
Jong-dar Yau (姚忠達)

Associate Professors
Chen-cheng Chen (陳珍誠); Hoang-ell Jeng (鄭晃二); Chi-wen Liu (劉綺文);
Fu-kuo Mi (米復國); Jui-mao Huang (黃瑞茂); Ih-cheng Lai (賴怡成)

Assistant Professors
Wen-an Wang (王文安); Hsin-jung Liu (劉欣蓉); Tzen-Ying Ling (林珍瑩);
Ying-Chang Yu (游瑛樟); Chun-Jung Ko (柯純融); Yi-Chih Huang (黃奕智);
Ya-Ting Yu (游雅婷); Liang-Ping Yen (顏亮平)

Lecturers
An-rwei Li (李安瑞)

Degree Requirements

1. Requirements for a degree of B.S. in Architecture:
   Completion of 157 credits of courses, including 106 credits of required courses and 32 credits of elective architecture courses.

2. Requirements for a Master’s degree in Architecture:
   Completion of 28 credits of courses, including 28 credits of required courses, and thesis.

Course Descriptions

Undergraduate Courses

E3641 History of Architecture (I) (3/0): History of Architecture is designed for a whole academic year of study. This course teaches students the developments of world architecture chronologically by concentrating on cultural influences and interactions beyond geographical and political boundaries. The whole course is divided into History of Architecture I and II. In History of Architecture I, the course concentrates on the pre-modern period of world architecture, which can be considered as traditions of
architecture of different cultures. The course will introduce the technologies, architectural styles, and material developments under various cultural traditions of the world.

**E3642 History of Architecture (II) (0/3):** History of Architecture II emphasizes the modern development of architecture. Starting from the late nineteenth century, this course introduces the technological, theoretical and material development, and the discursive formation of modern architectural theories throughout the 20th century and early 21st century.

**E3643 Engineering Mechanics of Materials (3/0):** The purpose of this course is to train students of architect to learn the fundamental architectural mechanics and mechanical behaviors of material properties. The following topics are included: force and moment, resultant and resolution of planar forces, force equilibrium, rigid body diagram, supports and reactions, centroids and moment of inertia of an area, stress and strain, shear and bending, and deformations of axial bars and beams.

**E3643 Case Studies in Architecture (3/0):** This course is set up as a supportive program for architectural design, including two parts: lectures and a two-day field tour. The lectures cover cultural and performance facilities, office buildings, housing, school buildings, and urban design, while during the two-day tour, students have access to latest architectural designs in Taiwan.

**E3632 Introduction to Architecture Humanities (0/3):** This course covers a wide variety of topics, from the awareness of architecture as a profession and understanding local architecture and history as a start, to other topics such as the development of current global trends in architecture, and technology, human care, and other issues. In addition, the relationship between Modern Architecture and the aesthetics of Modern Art will be explained. Understandable language combined with a wealth of video content will be well applied. This course aims to stimulate beginning students’ enthusiasm for future learning.

**E3568 Computer-Aided Architectural Drafting (2/2):** In this intensive course, computer graphics, parametric design, digital fabrication, and robotic arm will be covered. This course starts with the introduction of computer graphics, and then combine the concepts of parametric design and digital fabrication. The purpose of this course emphasizes how to fabricate the virtual models in the computer to real world. Finally, ideas about the robotic arm in architecture will be discussed.

**E3271 The Planning of Intelligent Green Building Environments (0/2):** This course is based on intelligent green building development and applied use of green building theory.

**E0277 Design Drawing (2/0):** Foundation work focuses on the drawing of buildings, which forms the ability to understand and describe the drawing system and the drawing methods. On this basis, the use of illustrations will be discussed so as to help resolve problems of architectural design.

**E0054 History of Chinese Architecture (2/0):** The aim of this course is to describe the process of architectural development in the Chinese cultural area, analyze the causes behind the phenomenon of its transformation, and enhance students’ understanding of essential elements of dwelling form, construction and symbolic meaning.

**E0128 History of Taiwanese Architecture (0/2):** This course involves on-site visits and independent research. In particular, it focuses on the last 100 years in the relationship between Taiwan and the world.

**E0172 History of Western Architecture (0/2):** By using a conceptual framework of time as a vertical axis and architectural pieces of different eras as a horizontal axis, we explore the special characteristics of buildings through the history, including their social background, and the evolution of architecture and technology.

**E0180 Strength of Materials (0/2):** This course leads students to explore stress and strain in axially loaded members, direct shear, and torsion. Shearing force and bending moment diagrams, beam deflections, and Mohr's circle are also covered.
E0227 History of Modern Architecture (2/0): This course investigates issues that have influenced the making and meaning of architectural design projects from the mid-19th century to the early 20th century. As part of the course, students will read texts and present case studies.

E0246 Physical Environments in Architecture (3/0): This course discusses architectural planning and how designers use the physical environmental to minimize the use of energy.

E0257 Architectural Programming (2/0): This course focuses on how to design an architectural program. It also discusses issues related to designing processes and planning, so as to improve students’ ability in the area of building design.

E0271 Architectural Structural System (0/2): This course introduces concepts of structure, such as structural systems, principle, load, stress, and earthquakes. Concepts related to arches, cables, beams, frames, trusses, slabs, membranes, and shells are also introduced.

E0273 Architectural Structure and Form (2/0): This course explores the development of structural forms, structural actions, structural materials, construction and form, structural elements, complete structures, early forms, contemporary wide-span structures, bridges, multi-story buildings and structures, and structural understanding and design.

E3064 Fundamental Science for Architects I in Mathematics (3/0): This course aims to provide freshmen interested in architecture with basic instruction in mathematics. Students will be required to pass a series of examinations in the areas of trigonometry, algebra, analysis, and synthetic and analytic geometry. One of the course objectives is to help architecture students bridge the gap between architecture and mathematics.

E3065 Fundamental Science for Architects II in Physics (0/3): This course aims to provide basic instruction in physics to freshmen who are interested in architecture. Students are required to pass a series of examinations in physics, on topics such as Newton’s law for architecture, general concepts of heat flow and temperature, wave properties (including light and sound), and fundamental electrics for architectural equipment. One of the principles of this course is to help architecture students bridge the gap between architecture and physics.

E0366 Introduction of Architecture and Sustainable Environment (3/0): This course provides an overview of the TKU architecture program, including both course descriptions for all studios and criteria for evaluating studio work. Architectural education serves to lay the foundation for professional development. It supports students in the aspects of how to learn, how to approach sustainable design, how to appreciate history, and how to assume the responsibilities of an architect. It introduces students to technology and structures; teaches understanding and communication, especially with engineers, technicians, and builders who work together in the building construction industry.

E0550 Study on Urban Space (0/2): This course explores and examines a variety of urban spaces, including parks, plazas, streets, waterfronts, urban architecture, and all communal spaces. It also provides students with urban spatial design theories that have emerged over the past eighty years.

E0587 Surveying Lab. (0/1): In this course, students are required to carry out practical work in tape measurement, levelling and surveying angles, surveying bearings and directions, and conducting traverse and topographic surveying.

E0617 Structural Theory (2/0): This course introduces students to the basic concepts and principles of structural theory related to beams, trusses, rigid frames, and space frameworks.

E0671 Engineering Application of Computers (2/2): This course focuses on concepts and techniques involved in computer-aided architectural design. It explores the use of computers in contemporary architectural practice. Software programs include AutoCAD 2D and 3D, Photoshop, multimedia, visualization of artefacts, realistic rendering and animation. This two-credit course involves lectures and laboratory work.

E0757 Site Planning (0/3): This course consists of three sections: (1) basic knowledge of site planning
and studies on different building types; (2) an outdoor survey workshop to strengthen students’ site investigation skills; (3) hands-on practice in organizing a site planning project.

E0871 Construction Laws and Regulations (0/2): National land use planning, division of urban planning, building and construction administration, the issue of construction license, public housing and urban development.

E0873 Construction Management (1/0): This course introduces students to topics such as CPM/PERT; the bar chart, engineering management, cost control, PCM, logistic planning, and quality control.

E0884 Environmental Control System (0/3): This course discusses issues on how designers use architecture equipment systems to control the environmental impact of building.

E0960 Surveying (0/2): In this course, students are introduced to theories of measurement and errors, tape measurement, leveling and surveying, angles, bearing and direction surveying, traverse surveying, and topographic surveying.

E0969 Applied Mechanics (2/0): This course is concerned with the statistics of basic mechanics. Several concepts are explored in this course, and examples and problems are provided in SI units.

E1034 Introduction to Computers (2/2): This course introduces basic knowledge related to computers and teaches students how to use the computer to increase one’s ability to make architectural presentations.

E1152 Architectural Design (I) (3/3): As an introduction to design, this course requires students to conduct a series of small design projects with specific objectives. It begins from abstract form making to larger projects (such as furniture design), and eventually, complex projects related to site selection. Projects not only require students to learn the basic design tools, i.e. model making and architectural drawings; they further challenge students to grasp the relationship between built and drawn representations of conceptual designs.

E1153 Architectural Design (II) (3/3): Based on the principle of “learning by practice”, this course offers intensive practical training. As beginners in a specialized field, students are urged to demonstrate a keen sensitivity to professional discipline.

E1154 Architectural Design (III) (4/4): This one-year course focuses on the design of the TKU Student Communication Center, a low-rise office building that provides students with general information on housing and a range of other items.

E1155 Architectural Design (IV) (4/4): The area of architectural design is today much more specialized than in the past, and the facets it encompasses are much more diverse. We encourage our students to consider architecture from different points of view and prepare themselves to partake in extensive teamwork after they graduate. Therefore, the course not only equips students with professional skills, but also helps students accumulate experience and develop necessary skills and traits, such as creative-thinking, comprehension of materials, proper control of design procedures, and how to create a design using advanced technology.

E1156 Architectural Design (V) (4/4): As the final stage of architectural design training, instruction at this level provides support for individual student research, so that students can complete a design project at the end of the academic year.

E1253 Case Studies in Architecture (I) (2/0): The aim of this course is to provide basic concepts and knowledge in designing buildings. Fundamental spatial elements will be addressed by categorizing them into entrance, window, wall, ceiling, roof, staircases, space for social interaction, individual space, light, materials, tectonics, etc.

E1254 Case Studies in Architecture (II) (0/2): As a complementary course of Architectural Design, this course mainly focuses on knowledge to do with human scales, spatial order and materials and construction.
E1334 Environmental Design and Human Behavior (0/3): This course offers an introduction to human behavior functioning in the environment, focusing on different needs in different user groups and tailoring design to meet consumer needs.

E1352 Experiencing Architecture: Towards a Critical Architectural Representation (0/2): As an introduction to architectural representation, this course focuses on the basic skills in image making, information reading through images, and preliminary photographic criticism training.

E1553 Design Methodology (0/2): Through a series of lectures and exercises, students will come to understand design methods developed since the 1950’s and to grasp the thought process behind such designs.

E1661 Architecture Post Occupancy Evaluation (2/0): A review of architectural performance based on the user’s perspective, including types, purposes, and methods of evaluations, and analysis of successful as well as failed case studies.

E1662 Architectural Criticism (0/2): This course explores the history of modern architectural criticism and theory from the beginning of the 20th century to the present. The topics focus on architectural style, space, form and meaning.

E1749 Architectural Representation (2/2): This course is designed to support and complement the freshman design studio. It provides students the opportunity to experiment with different methods and techniques of art and architectural representations. Woodshop, casting, collage, painting, free hand and architectural drawing are introduced in a workshop/studio setting.

E1750 Introduction to Architectural History (2/0): This course provides lectures on architectural history and basic ideas about the writing of architectural history.

E1753 Contemporary Architecture and Design (0/2): This course presents the historical and theoretical development of Western architecture from 1945 to the present. Students will read texts and present their building case studies as term papers.

E1755 Building Construction Practice (0/2): This is an elective course for seniors who will enter the field of architecture after graduating. Each week, we arrange to visit a construction site, architectural firm, interior design firm, high-rise building, prefab factory, etc., to enable students to better understand the practical nature of building and business.

E1756 Introduction of Classical Writings in Architecture (0/2): This course offers an introduction to modern architecture, post-modern architecture, deconstructivism and critical regionalism via a series of writings.

E1758 Theory of Design (0/2): This course is designed to transcend the spatial aspect of visual orientation in the process of design and teaches students how to adapt when faced with changes or new circumstances. Using the structure as a base, students experience the real environment, are challenged with a variety of interesting topics, and practice using design skills to affect the physical environment.

E1799 Introduction to Urban Planning (3/0): This course begins by introducing the history and theory of urban planning in Western countries. It then moves on to describe mechanisms and tools used in the urban planning of Taiwan.

E2054 Space and Society (0/2): This is an introductory course that addresses the issues of space and society. Some basic issues will be explored, such as: what’s the relationship between space and society? Are there any forms of space that can be defined beyond the social aspect? How are social elements, such as gender, race, and class, represented through and formed by space? The course will also discuss some social and special theories to enhance theoretical thinking.

E2257 Introduction to Urban Design (2/0): This course provides an understanding of the dynamics that has created urban environment, including cultural, political, and spatial issues. It also provides the theoretical context of contemporary urban designers and planners.
E2285 Architecture Multimedia Presentation (2/2): This course introduces multi-media presentation of architecture, including 3D model animation editing and cutting. The purpose of doing so is to make an architectural film presentation.

E2414 Assemblage (3/0): This course is concerned with the operation of architectural knowledge and techniques of mastering material characteristics to utilize fundamental environment, design, and creative experiences to turn construction work into creative architecture.

E2415 Construction and Management (2/0): This course serves to introduce the practice of architecture as a profession and as a design service business. The process of turning designs into buildings requires far more than inspiration and technical expertise. The course consists of three parts. The first will focus on the nature of professionalism and ethics in general and the way they have developed in the design professions. The second offers a detailed look at the professional operations of a design office, which will provide the basis for understanding the business and management issues that follow. This segment addresses management structures and their effect on design practices. The third segment of the class addresses project management methodologies related directly to architecture and construction.

E2528 Building Technology (I) (3/0): This course provides students with an understanding of the technical aspects of building. Masonry, reinforced concrete, wood, and steel are the four building systems. Various construction methods will be discussed in the categories ‘roofs’, ‘walls’, ‘floors’, and ‘foundations’. Various systems of structure, building envelopes, water proofing, and energy conservation will also be examined. The focus is placed on the integration of the building elements of structure, environment, enclosure, formal expression, and spatial definition.

E2529 Building Technology (II) (0/3): This course provides students with an understanding of the technical aspects of building. Masonry, reinforced concrete, wood, and steel are the four building systems. Various construction methods will be discussed in the categories ‘roofs’, ‘walls’, ‘floors’, and ‘foundations’. Various systems of structure, building envelopes, water proofing, and energy conservation will also be examined. The focus is placed on the integration of the building elements of structure, environment, enclosure, formal expression, and spatial definition.

E2530 Sustainable Architecture (0/2): This course offers a glimpse into utopia. It is divided into two major parts. The first explains several introductory concepts, such as planning and design, transportation, landscape and nature in the city, building design, energy and information, materials, water, and waste and resources. The second is a group of case studies, which draws on some of the best experiences from Taiwan and all over the world. This course hopes to motivate interested students to design and develop their own utopias.

E2531 Design Development and Detailing (0/2): This course explores means of choosing appropriate building materials and integrating these materials in proper manners in building and interior design. This course will emphasize the “appropriateness” in detailing components that are essential in the creation of space.

E2532 Architectural Lighting Design (2/0): This course offers an introduction to light, the visual process, colors, light sources, luminaires, point-by-point calculation, computer calculation and 3D lighting simulation.

E2533 Architecture in English (2/0): This course aims to enhance students’ ability to understand English oral and visual presentations in the field of architecture. It is taught entirely in English, so that students can be prepared for global communication.

E2534 Urban Housing Case Study (2/0): This course explores the design topic of housing. It will focus on issues such as “how to make form”, as well as site analysis and spatial organization.

E2555 Architecture and Urbanism in the Age of Globalization (2/0): This course explores the possibilities of architectural and urban design in the process of globalization since the 1970s. It begins from the theoretical analysis of globalization to new forms of architectural and urban programming, and finally to various case studies related to the subject.
E3056 Architecture Ethics and Codes (0/2): This course not only offers a general knowledge of architectural ethics, but also provides a general view of laws related to construction. This course will use real as well as imaginary cases as topics for class discussion. The cases used in class will principally be cases decided under the Building Law. Cases decided under the Civil Code, Criminal Code and private contract law will also be used in appropriate circumstances. Supplemental lectures will also be given.

E3057 Detail Design Development and Construction Practice (3/0): This course explores means of choosing appropriate building materials and integrating these materials in proper manners in building and interior design. This course will emphasize the “appropriateness” of detailing components that are essential in the creation of spaces. The course is divided into three parts. Part one is designed to teach modern wood frame construction. Basic information about wood materials and construction methods, as well as case studies of real projects, will be provided throughout this part. Part two will study the working drawings of Toyo Ito’s Taichung Opera House. This part is designed to bridge the gap between theory and practice. Part three will focus on working drawings and details design. Senior professionals from architecture firms will help students to learn about working drawings from the design concept stage through to the completion of construction.

E3058 Architecture in English I (2/0): The purpose of this course is to enhance students’ English comprehension in the field of architecture. Class content includes (1) vocabulary learning and sentence application, (2) article reading and short story writing, and (3) oral presentation and discussion. All classes will be conducted in English to increase learning efficiency and language proficiency.

E3059 Architecture in English II (0/2): This course is the second part of a two-semester course designed to enhance students’ English comprehension in the field of architecture. Course content focuses on strengthening communication skills used in formal oral and written presentations. All classes will be conducted in English to increase learning effectiveness and language proficiency.

E3060 Community Service and Practice (2/0): This course will provide students with a unique, experiential based learning activity. Opportunities for practical experience are provided so that students may learn and develop personally, professionally and academically.

E3086 Architecture Professional Practice (2/0): This is a professional practice course offered during the summer holidays for senior level students. The course familiarizes students with the field of architecture through practical experience in conducting design projects. Students will spend two months during summer under the supervision of the instructor and an authorized architect, who will evaluate students’ completed projects.

S0483 Environmental Ecology (2/0): This course provides an introduction to life on land and in water, temperature relations, water relations, population ecology, structure, function, and dynamics of an ecosystem.

T0978 Introduction to Landscape Architecture (2/0): This course explores the uses of materials, techniques and styles in contemporary landscape design. The study of the direct line links ecology, art, culture and philosophies as a perceptible whole.

Master’s Program

E3841 Advanced Architecture Design I (4/0): This studio course involves collaborative work on problems that are large in scope but require attention to spatial organization. Complex community design problems will be explored.

E3842 Advanced Architecture Design II (0/4): This studio is a project-based course that will involve learning about techniques of modern digital design in architecture. Students of this studio integrate CAD/CAM techniques, scripts, and digital tectonics into their design processes.

E3793 Sustainable Architectural Design Theory (2/0): The purpose of this course is to teach architecture students to respect nature, to learn about urban climate theory and energy conservation in a sustainable environment and smart green architecture. Professors of ecology, energy conservation, waste reduction, health,
wisdom, and recycling units will introduce to students the strong relationship between basic building physics and sustainable green environment space, and inform them of the strategies that can be applied in the space design process.

**E3795 Sustainable Urban Design Theory (0/2):** This course deals with the dynamics that have shaped the urban environment, including cultural, political and spatial issues. It also explores new urban design issues with respect to innovative technologies, such as artificial intelligence. By complementing the ‘Urban Design Studio’ module, this course aims to help students gain a theoretical context and develop implementation strategies for the urban environment.

**E0266 Theories of Architecture (2/0):** This course aims to discuss architectural theories from the classical to the modern times. By discussing, comparing and analyzing different perspectives on various issues of different theories, and by illustrating with physical design projects, this course provides students with comprehensive and deeper understanding on architectural theories and develops students the ability to analyze architecture critically.

**E3620 Operative Theory (0/2):** This seminar is a design-based theory class. It introduces students to the concept of “Operative Theory” and asks how it can be utilized in the design process. This class, coalescing architectural design, theory, and history, is an integrated laboratory for students to initiate new design thinking rather than to apply existing theories to design. It aims to construct a perspective of theory in order to create new designs.

**E3621 Multi-Agent Systems for Spatial and Urban Planning (2/0):** This course is an introduction to system study, complexity science, and the theory of computation that generate the concept of historical significance in the development of the research and application of Multi-agent systems. MAS models, providing good simulation tools of spatial transformation and urban regeneration, will also be introduced. The course is divided into three parts; a review of theories, the building of multi-agent systems, and case studies.

**E3622 Exotic Moderns: Space and Design Thinking (0/2):** Expect a well-rounded design thinking experience that will flex your skills in most (if not all) core design thinking abilities. We begin with the premise that modernity, claimed and defined by the West, was fundamentally global and that colonialism and modernity are connected. From these perspectives we will explore the cultural and symbolic dimensions of spatial transformation and the fundamental design thinking related to this transformation. The seminar will focus on the ways in which global and local features reconcile when local settlement practices / spatial cultures encounter universal ones. While recognizing our subjective position within the Western academy, we will critically examine dualities such as 'traditional' and 'modern,' 'West', and 'non-West,' 'Orient' and 'Occident,' as culturally constructed categories that frame professional understandings and interventions in architecture and urbanism.

**E3689 Isle Urbanism (0/2):** Island Landscape Design Theory. This is the advanced level of Design Theory. It focuses on the design of urban landscape transformations and gives holistic and individual observation over 20 years of Taiwan urban and rural area. In the class, we will use “Spatial Agency” approach to construct the theory of island landscape design theory.

**E3326 3D Modeling & Visualization (2/0):** This course covers topics from the existing to the imaginary: parallel development of freehand and digital techniques for 3D viewing, brainstorming, production, and communication.

**E3323 Design Intelligence for Life and Space (3/0):** This course explores the relationship between computers and design. By exploring spatial design and computing theory (such as ubiquitous computing, interactive design, smart buildings, etc.), the course emphasizes the building of computational mechanisms and elements within design. It also applies the Arduino platform to explore opportunities for design and creativity in architecture or urban space planning.

**E3324 Urban Competition (0/2):** This course discusses trends of urban development in the 21st century. It explores these trends from a social, environmentally-friendly, technological, and cultural perspective. This course also discusses competition in urban development in different cities.

**E3334 Sustainable Building Design and Constructional Practice (0/2):** Architectural design should efficiently utilize available resources in a responsible way; resolve differences between environmental, social, and economic interests while fulfilling the needs of the time. We should also consider the
impact of building design on our collective future. Sustainable building design applies three criteria to the selection of building materials: how the material got produced; in what way the material was used; and how the material waste was managed. We shall study the manufacture, design, and recycling aspects of building material. Furthermore, we will study the design of the building shell in terms of its energy saving performance in efficiency and sustainability. We will improve the performance of the building shell in the strength of the design that integrates the interior, functional needs with user’s comfort and the exterior climate reality.

E3219 Architectural and Environmental Simulation-Based Design (2/0): The aim of this course is to introduce computational simulation tools and techniques to evaluate the performance of design alternatives. Topics include solar, lighting, thermal and acoustical analyses.

E3256 Sustainable Environmental Evaluation (2/0): This course involves a series of discussions on sustainable architecture to help students keep an open mind. The topics include design ethics and sustainability; climate change and the built environment; global renewable energy development; sustainable design principles; net-zero energy building; LEED applications; and issues related to current trends in the area of architecture.

E0270 Computer Program in Architecture (0/1): This course introduces techniques of computer graphics programming. Programming language Processing is applied for 2D and 3D computer graphics. Different computer programming commands such as parameter, condition, for-loop, recursion, and function are taught step by step.

E1041 Architectural Semiotics (2/0): Through the theory of architectural semiotics to the reflex concept of composition space, students will understand the meaning of architectural semiotics and manual semiotics and reach the goal of architectural creation.

E1196 Energy Factors in Architecture (0/2): To provide graduate students with the knowledge and tools needed to analyze and integrate energy considerations into their architectural designs, this course discusses major energy factors in construction with a focus on building envelopes and mechanical systems in the process of architectural programming, planning and design.

E1321 Induction Design (2/0): Induction design is a method for incorporating computer programs to generate architectural design results that meet design conditions. Different design cases and computer programs will be discussed in this course.

E1707 Building Disaster Prevention in Urban Areas (0/2): By studying the nature of disasters and patterns presented, we will trace resolutions from upward urban planning to downward building control.

E1709 Culture and Environment (2/0): This course discusses theories and ideas of space, place, behavioral settings and the environment, emphasizing the influence of human cognition and social, cultural factors in the understanding and organization of the physical environment.

E1712 Studio: Computer Media and Design (2) (4/0): This course is primarily a project-based course comprising readings and projects of increasing complexity that discuss the relationships of modern computer technology, architectural design, and contemporary culture. A series of design exercises address particular concepts of architecture in the information era.

E1718 Studio: Regional Culture and Urban Design (2) (4/0): This studio is concerned with spatial practice in common places. Cultural issues and practical strategies are analyzed to find ways to build an ideal community.

E1719 Green Architecture (2/0): This course discusses building conservation, low impact building methods, and issues to do with the environment, health, comfort amenity, ecological building and sustainable architecture.

E1720 Post War Western and Taiwanese Architecture (0/2): This course examines issues relevant to Taiwanese style architecture with regard to Western culture, ideology and building technology from 1945 to the present.
E1946 Computer Applications in Architecture (2/0): This course emphasizes the use of the computer in architectural design and visualization. Topics include: 3D modeling, geometric transformation, NURBS, and parametric modeling.

E2224 Vernacular Architecture (2/0): This course introduces ways of seeing and interpreting Taiwanese nature, history and culture, as revealed in built surroundings—buildings, settlements, city districts, and other man-made structures.

E2340 Environment Meaning and Interpretation (0/2): This course is an advanced graduate seminar focusing on the processes and products of environmental meanings. Theory discussions mainly involve cultural, historical social influences on the processes of meaning construction, and their material manifestations.

E2440 The Practice and Strategy of Urban Design (0/2): Urban design relates to the production of urban form, which is based on the interaction between the real world and the design mechanism. This course is divided into two parts: case studies of urban design process and discussions about urban design and planning concepts, which are derived from various visions of what urban transformation should evolve into and how design intervention can improve environmental quality. Issues about ecology, communication, participation, management, and conservation of urban texture will be emphasized. Overall, the main objective of the course is to help students develop the skill of planning with new concepts from design practice.

E2448 Information Culture & Architecture (0/2): This course introduces recent IT developments in architecture. Topics include: CAD/CAM, AI in design, hyper-body, hyper-surface, information-landscape, digital tectonics, cyberspace, and contemporary architecture theory.

E2589 Architect & Architecture (2/0): It is the goal of this course to help students form their own ability to think critically in architecture by a serious examination and analysis of architects and their works.

E2612 Ecological Engineering Methods and Environmental Landscape (2/0): Eco-engineering and ecological methods are introduced in this course. The course emphasizes the importance and impact of these methods on various engineering issues, such as hydrology, geo-technology, roads and pavements, environmental protection and urban planning. The management of corresponding projects and public participation are also discussed, with an emphasis on educational development. Overseas and domestic experiences will be addressed while a couple of field trips on eco-engineering projects around Taipei are arranged for students to gain a better grasp of these methods.

E2614 Cultural Studies and Landscape Theories (0/2): This course provides a basic understanding of new developments in cultural studies and landscape theories related to the field of architecture and helps students understand the various meanings of the generic term ‘cultural landscape’.

E2777 Architecture Design & Urbanism (3/0): This studio course involves collaborative work on problems that are large in scope but require attention to spatial organization. Complex community design problems will be explored.

E2786 Lecture Series on Architecture and Urban Environment Professionalism (0/2): This lecture series is intended to provide graduate students with a wide range of perspectives in professional practices related to architecture and urban design fields. Prominent and accomplished professional practitioners with specialty in various areas will be invited to share insights with students each week. Contact with a broad spectrum of accomplished professionals will provide students with inspiration for their future careers.

E2794 Sustainable Environmental Design (2/0): This course offers many real-life cases that introduce the relationship between notions of sustainability and the design process. Students can acquire knowledge of concepts related to design and incorporate these into their final projects. Students are required to submit midterm and final papers explaining what they learned throughout the course.

E2894 Theory of Urban Environment (2/0): This course deals with the dynamics that have shaped the urban environment, including cultural, political and spatial issues. It also explores new urban design
issues with respect to innovative technologies, such as artificial intelligence. By complementing the ‘Urban Design Studio’ module, this course aims to help students gain a theoretical context and develop implementation strategies for the urban environment.

**E2898 Comprehensive Survey of Architectural Theory (0/2):** Various architectural theories will be discussed and compared, allowing students to evaluate what influence these theories have had on our society. In addition, students will develop their own point of view and critique various architectural styles by writing weekly essays. Basic knowledge of architectural history is required for this course.

**E2920 Architecture and Globalization (0/2):** This is an introductory course that describes the relationship between contemporary architecture and the development of globalization. Students will learn to view architecture as a tool to penetrate the rapid social and cultural changes occurring throughout the world. At the end of this course students are expected to understand architecture as a man-made phenomenon.

**E3118 Studio: Architecture Theory and Design (0/3):** This studio is a project-based course that will involve learning about techniques of modern digital design in architecture. Students of this studio integrate CAD/CAM techniques, scripts, and digital tectonics into their design processes.

**T0081 Research Methodology (0/2):** This course trains students in pre-dissertation and pre-thesis research strategies by exposing them to a variety of methods of inquiry, including the nature of research, critical reading, and analysis.

**T8000 Thesis (0):** Post-graduate students are required to complete a thesis as part of the fulfilment of the master’s degree. Theses compiled for the Theory and Technique Group are research-oriented, while those written for the Design Group are design-oriented.
DEPARTMENT OF CIVIL ENGINEERING

Degrees offered: B.S., M.S., Ph.D.

Chairman: Cheng-hisn Chang (張正興)

The Department

The Department has an enrollment of about 800 students. It offers courses for undergraduate students and a graduate program for advanced study. In addition to the necessary background in the field of civil engineering, the department puts emphasis on specialized areas for both undergraduate and graduate students. These include: geotechnical engineering, structural engineering, and transportation engineering. The department offers BS, MS, and Ph.D. degrees in the field of Civil Engineering. For BS, MS, and Ph.D. degrees, a minimum of 146, 26, and 24 credit hours are required respectively; a thesis is required for the MS and Ph.D. degrees.

Faculty

Professors
Cheng-hisn Chang (張正興); Der-wen Chang (張德文); Hung-shan Hong (洪勇善)
Ying-haur Lee (李英豪); Yuh-yi Lin (林堉溢); Cho-sen Wu (吳朝賢);
Zon-yee Yang (楊長義); Jong-dar Yau (姚忠達); I-Cheng Yeh (葉怡成)

Associate Professors
Su-Ling Fan (范素玲); Chin-sheng Kao (高金盛); Ming-jen Liu (劉明仁);
Jen-mu Wang (王人牧); Yuan-Lung Lo (羅元隆)

Assistant Professors
Ming-Hsiu Tsai (蔡明修); Chien-kai Wang (王建凱); Jia-Wei Lee (李家瑋)

Degree Requirements

1. Requirements for a Bachelor's Degree in Civil Engineering:
   Completion of 128 credits of courses, including 91 credits of required courses and 21 credits of elective civil engineering courses.

2. Requirements for a Master's Degree in Civil Engineering:
   Completion of 24 credits of courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for a Ph.D. in Civil Engineering:
   Completion of 18 credits of courses.

   Students are required to pass a qualifying examination in their first two years and publish at least one research paper in any journal listed in the Civil/Architecture Engineering Index. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

E0006 Introduction to Civil Engineering (1/0): This course introduces concepts of marketing as well as career prospects related to the field of Civil Engineering. Students will gain information about the TKU Department of Civil Engineering, including data from courses designed for students of both divisions. This course is a one-credit compulsory requirement for CE undergraduates. Students are expected to acquire a basic understanding of the profession through this course. Lectures and multi-
media teaching accessories are provided for effective leaning.

**E0011 Soil Mechanics (II) (3/0):** This course offers an insight into the mechanical behavior of engineering soils when they are sheared or compressed or when water flows through them. Topics include the nature of soil, states of stress and strain in soil.

**E0023 Engineering Geology (0/3):** Topics in this course include the interrelationship between engineers and nature, the change of geological and regional structure at construction sites, classifications and features of rocks and their characteristics in mechanics and various existing activities of earth crust related to engineering design.

**E0024 Engineering Materials (2/0):** This course offers an introduction to the basic structure, physical properties, mix design, testing and mechanical behavior of civil engineering materials.

**E0026 Engineering Materials Laboratory (1/0):** Laboratory sessions provide hands-on experience in performing standard testing procedures used for material specifications and construction quality control.

**E0034 Engineering Mathematics (I)/(II) (3/3):** This course introduces students of engineering and physics to the areas of mathematics that, from a modern point of view, seem to be the most important in connection with practical problems.

**E0180 Mechanics of Materials (3-4/0):** The first part of this class covers the analysis and design of structure members subject to tension, compression, torsion, and bending. Topics of the second part are the transformations of stress and strain, combined loadings and deflections of beams.

**E0300 Fluid Mechanics (0/3):** Through this course, students will gain a feel for flow patterns, pressure variation and shear stress in fluid flow, which will give them a solid basis in fluid mechanics. Topics include flow patterns, velocity, acceleration, kinematics, and pressure variation in a flowing.

**E0466 Dynamics (2/0):** This course covers the theory and principles of dynamics in introductory mechanics. Subjects include kinematics and kinetics of particles and rigid bodies.

**E0587 Surveying Lab. (I)/(II) (1/1):** This course achieves the following three goals: (1) hardware training on instrument operation and instrument maintenance; (2) skill training on the entire graphing process; and (3) generating teamwork and coordination.

**E0607 Matrix Structural Analysis (0/3):** The displacement method of structural analysis is formulated through the principle of virtual work. Both manual calculation and application of the computer are introduced for the analysis of truss and frame structures.

**E0617 Structural Theory (0/3):** The purpose of this course is to provide instruction in fundamental structural theory using advanced approaches. The following topics will be introduced: the slope deflection (SD) method, with consideration to more complex structures, as well as fundamentals of the moment distribution (MD) method and the applications of energy methods in structural analysis.

**E0618 Structural Analysis (3/0):** This course introduces students to the fundamental tools for analyzing member forces and deformation of structures. Structural types include beams, trusses and frames, both determinate and indeterminate.

**E0617 Structural Theory (0/3):** The purpose of this course is to provide instruction in fundamental structural theory using advanced approaches. The following topics will be introduced: the slope deflection (SD) method, with consideration to more complex structures, as well as fundamentals of the moment distribution (MD) method and the applications of energy methods in structural analysis.

**E0665 Transportation Engineering (3/0):** This course focuses on transportation planning and transportation modeling; development and evaluation of transportation planning options; transportation system management; design of roadways, railways and air transportation facilities.

**E0730 Pre-stressed Concrete Design (3/0):** This course introduces students to the fundamental principles of pre-stressed concrete behavior and design, so that they can act effectively to optimize existing forms of construction and apply fundamental concepts with confidence in unusual and challenging situations.

**E0851 Reinforced Concrete (3/0):** This course provides instruction in general concepts related to the design of concrete structures, emphasizing the USD method. It serves as a kind of bridging course that
closes the gap between structural analysis and structural design.

**E0873 Construction Management (0/3):** Major topics in this course include contracts, construction planning, progress schedule control, financial planning and cost control, material management, labor and equipment management, quality control, safety and sanitation management.

**E0968 Steel Structure Design (0/3):** Introduction to steel structures, tensioned members, compressed members, beams, design of beams and columns, bolt jointing, welding, jointing and other joint design.

**E0969 Engineering Mechanics (0/3):** This course centers on basic principles of solid mechanics, statistics of rigid bodies, equilibrium problems, and analysis of structures, forces in beams, friction, and moments of inertia.

**E1035 Highway Engineering (0/3):** Geometric design of highways: background and guidelines; practical design examples; transition curves; analysis of highway capacity in Taiwan; earthwork; application of PC-MOSS software; thickness design procedures of flexible and rigid pavements used in Taiwan.

**E1124 Soil Improvement (0/3):** This course teaches practical methods of soil improvement in an easy to understand way. The classes will cover soil improvement methods and principles, application conditions, design and calculation procedures, construction elements and inspection methods. Through the course, students develop knowledge on a variety of soil improvement methods, and gain the ability to select the appropriate method and create an effective design.


**E2525 Strength of Materials (II) (2/0):** This is the second ‘Strength of Materials’ course. It is designed for students with a basic understanding in the area who want to pursue more advanced knowledge on the subject. The content in this course includes using discontinuity functions to calculate beam deflection, beams on elastic foundations, bending beams with non-symmetric cross-sections, shear center of thin-wall member, column-buckling problems and the energy principle.

**E2767 Ecological Engineering Methods (2/0):** This course covers a variety of ecological engineering methods and their applications for various engineering problems. Emphasis is placed on slope renovation, retaining engineering, bank revetment, ground sill works and ecosystems in a river as well as ecological corridors.

**E2955 Trackwork Engineering (2/0):** Topics covered include the history of railroad, train control systems, advances in track engineering, domestic construction experience of high-speed passenger rail, and other topics of interest.

**E3082 Engineering Graphics and Computer Drawing (2/0):** The goal of this course is to help students develop proficiency in graphics and drawing so that they can communicate with other professionals using graphical languages. Students will learn fundamental concepts of visualization technologies applied for engineering purposes through lectures, readings, laboratory work, discussions and projects. They will learn to use CAD-based software to illustrate structures, machines, and systems on paper or computer. Students will be taught fundamental topics in engineering graphics, such as 2D and 3D CAD systems, multi-view projections, sectional views, design and construction drawings, perspectives, structural drawing, and topographic drawings.

**M0007 Artificial Intelligence (0/3):** This course introduces key concepts of artificial intelligence sufficient for creating simple intelligent systems. Principles of rule-based systems are presented, while an expert system is selected for term projects. Each student will develop a prototype system for an application of his or her choice.

**M0086 Introduction to Business (3/0):** This is an introductory exploratory course designed for both business and non-business majors. From this course, students learn key concepts and disciplines of business and its environment, management and organization, people and production, marketing,
finance, risk management, and multinational business.

**M0271 Financial Management (2/0):** Corporate finance is the area of finance dealing with monetary decisions that business enterprises make and the tools and analysis used to make these decisions. The primary goal of corporate finance is to maximize corporate value while managing the firm's financial risks.

**M0286 Project Management (0/2):** This course introduces the fundamental concepts and elements of project management. The course also exposes students to various control aspects of project, such as requirement management, request for proposal, project proposal, scheduling, project-based organization, cost control, and resource management. Students are expected to gain the knowledge and skills in managing projects that are necessary for seeking employment opportunities.

**S0251 Foundation Engineering (0/3):** This course focuses on the science and art of applying the principles of soil and structural mechanics together with engineering judgment (the art) to solve the interfacing problem.

**E0010 Soil Mechanics (0/3):** This course introduces the concept of basic soil behavior under the influence of various forces.

**E2585 Introduction of Wind Engineering (0/2):** This course offers an introduction to the applications of Wind Engineering.

**E2997 Project Planning and Control (2/0):** An introduction to the knowledge body consists of the basic concept of scheduling models, Bar-charts, CPM and PERT, Work Breakdown Structure, RBS (Resource Breakdown Structure), CBS (Cost Breakdown Structure), Calendars and Resource Calendar, Resource leveling and allocation, Earn Value Management, Format settings, reports and schedule updating.

**E0013 Soil Mechanics Laboratory (0/1):** This course introduces soil tests on physical properties, classification, permeability, compaction, consolidation and shear strength. The tests are conducted in groups to help the understanding of experimental procedures and steps.

**E0595 Computer Programming (2/0):** This course introduces the programming language - Fortran. The objective is to be familiar with computing environments and further learn how to write programs to do advanced engineering analyses and scientific computations.

**E0615 Structural Laboratory (0/2):** The purpose of this course is to introduce basic measurements of structural responses in a laboratory. The measurements will be compared with the results of the structural analysis to find the difference between the previous methods. In the first half-semester, we discuss the operation principles of the Wheatstone bridge and the strain gage. In the second half-semester we shall measure the structural responses of different structure types, including the cantilever beam, the simply supported beam, the 2-D truss, and the rigid frame.

**E0768 Numerical Method (2/0):** This course introduces the fundamental numerical methods, which includes solutions to nonlinear equation(s), matrix analysis, interpolation function, regression analysis, numerical integration and differentiation...etc. Students can learn how to apply these methods to related problems, via the implementation of programming languages and the use of computers.

**E0852 Reinforced Concrete (II) (0/3):** This course is an essential to structural design. It is the second part of the course of reinforced concrete design. It is continued to introduce the analysis and the design of columns, the design of slabs, the design of beams subjected to twisting moment, the seismic resistance design of members, the design of footing and the design of retaining walls, etc. The knowledge is expected to continue to educate the students to know the basic concept of design and to obtain the ability of reinforced concrete structural design and the specialty in structural analysis and design.

**E3348 Computer-Aided Engineering Technology and Exercise (0/3):** This course is designed as a capstone course in the Department of Civil Engineering. The course encourages students to face real and complex engineering problems in daily life and try their best to find a solution to solve these
engineering problems based on their learning experience and knowledge background.

**E0813 Bridge Design (0/3):** This course allows students to realize the basic concept of bridge structural design; use the theory and the practice of the design of various bridge structures; understand the basic working attitude of bridge structure engineer; comprehend how to use existing programs.

**T0140 Seminar (2/0):** This course invites various field specialists to introduce civil engineering problems and ways of dealing with situations.

**E3407 3D Modeling and Computer Aided Design (0/3):** This course is an introduction to BIM (Building Information Modeling) and 3D design ideas, Tekla Structures-d design software implementations, and steel structure design, reinforced concrete design courses integrate knowledge of the application. Importing BIM technology can also improve the areas of construction management, construction project management and scheduling, as well as helping information exchange, allowing students thorough hands-on learn 3D design collaboration and help of the project life cycle.

**E1176 Engineering Economics (2/0):** This course includes the following topics Engineering Economic Decisions, Time Value of Money, Understanding Money Management, Equivalence Calculations under Inflation, Present Worth Analysis, Annual Equivalence Analysis, Rate-of-Return Analysis, Accounting for Depreciation and Benefit-Cost Analysis.

**M0517 Engineering Statistics (0/3):** The goal of this course is to teach students to make use of their knowledge of statistics to do data analysis. This course emphasizes the integration of application of computer software and statistical practice. The three main topics covered are: descriptive statistics, probability, and inferential statistics.

**E2961 Construction Law and Contract (0/2):** This course introduces the important basic concepts about Civil Code, contract law, construction contract, the Government Procurement Act, dispute resolution, etc., and further discusses the commonest and most important legal issues in the present practice of construction industry through case studies.

**E3409 Construction Estimating (2/0):** This course is designed for students to understand the concepts of engineering cost estimation. Students will have an opportunity to learn cost analysis and estimation of budget for civil engineering projects.

**E3408 Construction Methods (0/2):** The contents of this subject include the basic knowledge of construction methods, construction sequences and machineries of civil engineering project. Students will be able to understand the working condition in the site.

**E2833 Introduction to Geographic Information Systems (0/2):** Geographic information systems (GIS) combined with remote sensing (RS) and the global positioning system (GPS), cornerstone 3S for space information.

**E3634 Basic Engineering Mathematics (0/3):** Basic engineering mathematics constructs various basic subjects of civil engineering, including ordinary differential equations, Laplace transform, Fourier analysis, vector analysis, matrix, complex variable analysis.

**E3762 Introduction to Civil Engineering Design (0/1):** Introduction to civil engineering design: The main purpose is to implement the grouping method to encourage students to use the civil engineering concepts introduced in the classroom to complete the specified objectives (engineering design). The establishment of this course gives students the opportunity to develop their own imagination. And think about the discussion of mechanical behavior, and find solutions to engineering problems through team discussion, and at the same time use this course to assess and adjust the core competence of students.
Master’s Program

E0015 Engineering Properties of Soil (3/0): This is a laboratory oriented course; subjects covered include the formation of soils, index and hydraulic properties, and the compaction characteristic of soils. Consolidation behavior of soft clay and shear strength tests are also included.

E0016 Soil Dynamics (3/0): This course covers two basic areas: the liquefaction of loose saturated sands and the conventional dynamics of foundations due to the vibration of machines.

E0156 Finite Element Method (0/3): The finite element method is the most powerful structural analysis tool for civil engineers. The basic formulation and programming technique are introduced. According to the same procedures, the different elements such as truss, beam, plate and shell are easily formulated.

E0608 Structural Dynamics (3/0): This course covers methods for analyzing the stresses and deflections developed in any given type of structures when they are subjected to arbitrary dynamic loading.

E0862 Tunnel Engineering and Design (3/0): This course focuses on the design and construction of soft soil and rock tunnels. Emphasis is placed on the stability and safety of tunnels.

E1187 Rock Mechanics (3/0): Topics include the origin, formation, and characteristic of rock and rock joints. The index properties, engineering classification, and strength of rocks are presented in this course. Also included are the specific applications of rock mechanics for surface and underground excavations and foundations.

E1481 Applications of Geosynthetics in Civil Engineering (3/0): As an introductory course to geosynthetic applications, this course offers a comprehensive introduction of product-manufacturing, properties test, and design schemes.

Spectrum Analysis (0/3): This course is to introduce the basic theories of statistics and random vibration process. Students learn how to deal with random excitation calculation of structural response. This course contains basic theories of statistics and random process, definition of random process, Fourier analysis, spectral analysis, excitation-response relation, etc.

E2112 Fundamentals of Soil Behavior (0/3): This course introduces the fundamental principles of soil behavior. The major purpose is an understanding of the factors determining and controlling the engineering properties and behavior of soils under different conditions.

E2087 Constitutive Laws for Geologic Materials (3/0): This course covers a variety of constitutive or stress-strain laws of engineering materials. They play a significant role in providing reliable results from any solution procedure. Their importance has been enhanced significantly with the great increase in development and application of many modern computer-based techniques such as the finite element, finite difference, and boundary integral equation methods.

E2874 Computational Wind Engineering (3/0): This course introduces engineering graduate students to Computational characteristics of the Navier Stokes Equations; Unique fluid mechanics aspects of nonlinear advection terms, boundary conditions, and turbulence models; Grid preparation with Cartesian and unstructured mesh generation software; Hands on familiarity with FLUENT/GAMBIT and other software products.

E2878 Application of Artificial Intelligence in Engineering (3/0): This course introduces the principle of artificial intelligence and its applications in engineering. Symbolic programming, search algorithms, soft computing, knowledge management and business rule systems are among the topics discussed.

E2879 Engineering Information Management System (0/2): The course focuses on the introduction of database systems and other applicable information technologies for engineering information management. Students will have individual assignments designed to reinforce concepts from the lectures and to acquire necessary knowledge to use computers to improve management problems of
construction business.

**E3140 Advanced Steel Structures (0/3):** This course is an advanced course to steel structures. It introduces design of simple connections, etc. It also introduces characteristics of structural steel, plastic behavior and analysis of steel structures, seismic behavior and design of steel structures, design of steel and reinforced concrete composite structures, design of fatigue and fracture, seismic design of steel structures, etc. Students are expected to know the advanced concept of steel structural design and to obtain the ability and the specialty in advanced steel structural design.

**E3180 Wind Resistant Design of Buildings (0/3):** Building Aerodynamics, i.e., wind effects on buildings and structures, is a multi-discipline realm of knowledge. This course will cover the following items: characteristics of atmospheric boundary layer flow, bluff body aerodynamics and aeroelasticity, wind loads on buildings and structures, wind tunnel tests and applications of building wind code. Students should have taken a previous course on Random Vibration.

**E3200 Construction Financial Management (3/0):** This course offers an introduction to the knowledge body consisting of cash flow, risk management, project financing, build-operate and transfer, and the Private Finance Initiative (PFI) and Public Private Partnership (PPP).

**E3147 Construction Automation and E-business (3/0):** This course introduces the subjects and significance of automation and computerization in the construction industry. In addition, through a survey of the current status of automation and computerization in the industry, development procedures and trends of construction and computerization will also be provided.

**T0102 Seminar (0/1):** The objective of this course is to bring up-to-date construction engineering information/technologies to students. Accordingly, special issues to do with structure, geological engineering, and construction management will be explored. Moreover, experts in related areas will be invited to deliver talks and engage in discussions with participants.

**M0947 Data Mining (0/3):** Data mining is the process of discovering new patterns from large data sets. It involves methods related to the fields of artificial intelligence, machine learning, statistics and database systems. The goal of data mining is to extract knowledge from a data set in a comprehensible structure by drawing on database and data management, data preprocessing, models and inference.

**E3093 Construction Claims and Dispute Resolution (0/3):** An introduction to types of construction disputes, litigation, arbitrations, mediations, and alternative dispute resolutions, claims, compensation for prolongation costs and evaluation methods.

**E2823 Design of Base Isolation (3/0):** This course is designed for students to understand the basic theorem and the basic skill of analysis and design of structures with base isolation and various damping devices. Furthermore, it is designed for students to understand the application of base isolation and the damping devices in the asismatic design of building structures and bridge structures. Students will get familiar with basic analysis and design methods and purposes in the design capabilities of structures with base isolation and various damping devices.

**E2087 Constitutive Laws for Geologic Materials (3/0):** This course covers a variety of constitutive or stress-strain laws of soils. They play a significant role in providing reliable results from any solution procedure. Their importance has been enhanced significantly with the great increase in development and application of many modern computer-based techniques such as the finite element, finite difference, and boundary integral equation methods.

**E3844 Numerical Analysis in Biotechnical Engineering (3/0):** This course teaches students the fundamentals of numerical methods and spatial discrete techniques such as FD and FE methods, and how to apply them onto the relevant geotechnical subjects.

**E3535 Engineering Project Management (3/0):** This course mainly includes the following: Lean Project Delivery, Sustainability in the Construction Industry, Environment, Health and Safety of Construction Processes, and so on.

**E3846 Research Methodology and Paper Critique (2/0):** This course is designed for students to understand: (1) Concepts of research, research ethics and research methodology, research proposal
writing, and (2) Writing of research articles, publishing, and peer review of research articles.

**Ph.D. Program**

**E1071 Method of Architecture History (2/0):** This course trains students in architectural history research strategies by exposing them to discursive analysis, including figure, writing style, architecture style, historical view, etc.

**E2615 Design Thinking and Cognition (0/2):** Scholars working in the design psychology research field are invited to give lectures on their specific research topics, based on which students can formulate a broader vision for future research issues.

**E3002 Cultural Representations and Architecture (0/2):** This course explores how cultural phenomena affected architecture in pre-modern societies. Philosophy, social structure, architectural form and style will be discussed in an attempt to analyze potential design concepts.

**E3068 Information Culture Study and Architecture (0/2):** This graduate seminar introduces information techniques in architecture, cyberspace, the development of information society, and contemporary architectural theory in digital design, as well as conducting information critiques.

**T0102 Seminar (Cross-Disciplinary Seminar) (0/2):** This course is intended to establish a methodological and epistemological framework for cross-disciplinary spatial research, including socio-spatial studies, political-economic critique, cultural studies, urban planning discourses, and architectural theories. Seminar participants are expected to initiate critical issues and to lead discussions based on the reading materials and specific social/spatial phenomena observed.

**E3003 Independent Study (0/2):** This course emphasizes on independent research and study ability of the dissertation.

**E1142 Soil Structure Interaction (3/0):** This course discusses the mechanism of soil-foundation interacting behavior. Emphases are placed on the theory and analysis of foundation vibrations, dynamic soil properties and their effects on SSI as well as modeling wave propagations in the soil media due to dynamic loadings. Moreover, the earthquake concern in foundation design and liquefaction problems are also presented. Students are expected to establish a good understanding of the importance of both static and dynamic soil-foundation interactions and their impacts on super-structures.

**E3843 Special Topics in Rock Mechanics (3/0):** This class focuses on several special topics of rock engineering, such as the HLW underground spaces and its dynamic stability analysis by earthquake. The numerical modelling using PFC and BEM methods will perform and discuss.
DEPARTMENT OF WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

Degrees Offered: B.B.A., M.B.A., Ph.D.

Chairman: Lee, Po-ching (李柏青)

The Department
The department was founded in 1964 as the Department of Water and Soil Conservation. In 1988, the department was renamed as the Department of Water Resources and Environmental Engineering. Currently the department offers an interdisciplinary undergraduate program that consists of joint programs in the fields of water resource and environmental engineering. The graduate programs offer M. Eng. and Ph.D. degrees.

The undergraduate program has two programs: water resources engineering and environmental engineering. Both programs are designed to equip students with a solid foundation for engineering practices and for further study in related fields.

The M. Eng. program provides graduate students with both professional knowledge and research skills. The Ph.D. program is designed to prepare students to become professional engineers or researchers capable of conducting both theoretical and practical engineering research.

The department’s laboratories and facilities accommodate research in the fields of Fluid Mechanics, Open Channel Hydraulics, and Environmental Engineering.

Faculty

Professors
Sue-huai Gau (高思懷); Shyh-fang Kang (康世芳); Chi-wang Li (李奇旺);
Li-chiu Chang (張麗秋)

Associate Professors
Pao-hsing Chang (張保興); Luke-Chen Chen (陳俊成); Fu-Kuo Huang (黃富國);
Po-ching Lee (李柏青)

Assistant Professors
Shih-Feng Su (蘇仕峯); Hsiao-Chung Tsai (蔡孝忠); Ching-Yu Peng (彭晴玉);
Cheng-Hsien Lee (李政賢); I-Chien Chien (簡義傑); Yu-Ta Wu (吳昀達)

Degree Requirements

1. Requirements for a degree of Bachelor in Engineering:
   Successful completion of 128 credits of courses, including 102 credits of required courses and 10 credits of elective courses in the water resources engineering program. Successful completion of 128 credits of courses, including 99 credits of required courses and 13 credits of elective courses in the environmental engineering program. Courses include liberal arts and professional engineering subjects in water resources engineering and environmental engineering.

2. Requirements for a Master’s degree in Engineering (degree offered in 2 fields):
   Minimum number of credits: 31 credits (including 4 thesis credits). Courses include subjects in advanced water resources engineering and advanced environmental engineering.

3. Requirements for a Ph.D. degree (degree offered in 2 fields):
   Minimum number of credits: 26 (including 6 dissertation credits). Courses include advanced theories in water resources engineering and environmental engineering with a required seminar.

Course Descriptions

Undergraduate Courses
E0010 Soil Mechanics (3/0): This course introduces the concept of basic soil processes under the influence of various forces.

E0012 Introduction to Air Pollution (2/0): The theory and application of control technology for air pollution such as VOC, NOx, SO2, PM are introduced. Basic theories include combustion, absorption, mass balance, energy balance and mass and heat transfer. Applications covered include the design process for incinerators, catalyst reduction facility, scrubber, activated carbon adsorption, cyclone, ESP and fabric filter.

E0026 Engineering Materials Lab. (0/1): The laboratory experiments are designed to provide students with an understanding of the properties of engineering materials, testing procedures and methodologies, recording data, and interpretation of the results.

E0028 Engineering Statistics (0/3): Many engineering problems intrinsically possess the characteristics of regularity or uncertainty. If we need an effective derivation and a precise representation tool on both regularity and uncertainty, then probability and statistics are the suitable methodologies. Since probability is the foundation of statistics, this class puts equal amount of time on both subjects, i.e., probability before the mid-term exam, and statistics after.

E0031 Engineering Graphics (2/0): Basic graphic specifications that include lines, projection, sectional plane, dimension and three-dimensional drawings are introduced.

E0034 Engineering Mathematics (3/3): The course provides students with a comprehensive and up-to-date resource for learning engineering mathematics, that is, applied mathematics for engineers and physicists, mathematicians and computer scientist, as well as members of other disciplines. The content of the course varies between “calculus” and “differential equations” and is arranged into four parts: ordinary differential equations; linear algebra; Fourier analysis; complex analysis. A course in elementary calculus is the sole prerequisite.

E0057 Intermediate Hydrology (0/3): This course introduces concepts in hydrologic design, flood routing, hydrologic models, basic probability and statistics, frequency analysis, hydrologic statistics, and simple linear regression.

E0101 Practice & Survey of Hydrology (2/0): The course is designed for students with a major in water resource engineering or related fields. The fundamental concepts and methods of hydrographic and land surveys are introduced. Land surveys include leveling, distance, angles and traversing. Hydrographic surveys include navigation channels, inland rivers, coastal engineering projects and underwater surveys. Modern surveying technologies, such as global positioning system, satellite survey, surveying computation and are briefly introduced.

E0102 Hydrology (3/0): Covering hydrologic processes and analysis related to water quantity, this course is designed as an introductory course to hydrology.

E0105 Water Resources Planning (2/0): The purpose of this course is not only to enhance students' knowledge of hydrological and hydraulic models, but also to improve their abilities for integrating and applying professional knowledge, internet resources and software tools to water resources planning.

E0108 Water Resources Engineering (3/0): This course introduces concepts in hydraulic machinery, hydroelectric power, drainage, flood-damage mitigation, dams, and reservoirs.

E0113 Water Resources System Analysis (3/0): The purpose of this course is to introduce hydrologic analysis and discuss some real applications. This course can help students to understand rainfall-runoff analysis and hydrologic processes.

E0114 Water Resources Planning (0/3): Introduction; planning principles; engineering and economic planning concepts; elements of project formulation and appraisal; mathematical models; analysis of risk and uncertainty; environmental impact assessment; water resources in Taiwan; sustainable development of water resources.

E0144 Open Channel Hydraulics (3/0): This course introduces the continuity equation, the
momentum equation, the energy equation, momentum functions, critical and uniform conditions, gradually varied flow, water surface profile, discharge problems, the direct integration method, the graphical method, rapidly varied flow, and flow measurements.

E0149 Groundwater (4/0): This course covers the following topics: physical properties of aquifers and the vadose zone, groundwater hydrology, Darcy’s law and hydraulic conductive, well hydraulics, soil water in the vadose zone, groundwater recharge, groundwater contamination, solute transport by advection and diffusion.

E0160 Wastewater Engineering (3/0): This course introduces sewage engineering and wastewater treatment technologies. The course contents include sewage engineering, water quality standards, theory of wastewater treatment, biological treatment processes (such as activated sludge, bio-film and anaerobic processes), sludge treatment and disposal, and wastewater advanced treatment.

E0161 Wastewater Treatment Design (2/0): This course involves a case study of the design of a wastewater treatment facility. This process of design draws on theories of unit operation processes and wastewater management learned in earlier courses.

E0180 Mechanics of Materials (3/0): This course introduces mechanics of materials, including stress, strain, material properties and displacement of structure members due to various loads.

E0296 Fluid Mechanics Lab. (0/1): To enhance the fundamental concept of Fluid Mechanics by Experiments.

E0300 Fluid Mechanics (3/0): Definition of fluid; properties of fluid; density and viscosity; incompressible fluids; static fluids; inviscid fluid; Euler’s equation; Bernoulli equation; conservation of mass; conservation of momentum; the Navier-Stokes equation; dimensional analysis; modeling; dimensionless parameters.


E0390 Coastal Engineering (0/3): This course is an introduction to wave theories, including the small amplitude wave theory and the non-linear wave theory. The formation of waves is due to the change of water depth shoaling effect. Analyses of the phenomena known as wave reflection, wave diffraction and wave refraction are also covered.

E0617 Structural Analysis (0/3): This course introduces students to the fundamental tools for analyzing member forces and deformation of structures. Structural types include beams, trusses and frames, both determinate and indeterminate.

E0620 Water Supply Engineering (0/3): In this course, the following topics are discussed: methods to predict population and quantity of water supply, sources and characteristics of water supplies, application of pipe hydraulics in the design of water systems, pump and pumping station design, introduction of distribution system, and introduction of water treatment processes.

E0671 Engineering Application of Computer (0/3): This course is an introduction to numerical methods and computer software, with an emphasis on their applications to water resources and environmental engineering.

E0768 Numerical Methods (3/0): This course considers various numerical methods for solving engineering problems.

E0851 Reinforced Concrete (0/3): General design concepts in designing concrete structures are provided, with an emphasis on the USD method. It is a bridge course that helps students navigate from structural analysis to structural design.

E0969 Applied Mechanics (0/3): The main objective of mechanics of statics should be to develop in the engineering student the ability to analyze and design a given problem in logical manner and apply to its solution. This course is designed to offer Equations of Equilibrium, simple beam Cantilever beam, Center of gravity, Centroid shear, and moment diagram.
E0975 Water Quality Analysis (1/0): Course contents include standard methods for water quality analysis for chemical and physical parameters such as turbidity, hardness, suspended solids, chemical oxygen demand, etc.

E0982 Solid Wastes Treatment (3/0): An introduction to the integrated solid waste management systems includes legislation, sources, fundamental characteristics, collection and transportation, pre-treatment, transformation, final disposal, and recycling. Service-Learning includes: waste collection, resources recovery and composition.

E0985 Air Pollution Control (0/3): This course introduces the basic concepts of air pollution and principles and design of air pollution control technologies. The topics discussed include the control of particulate matters and gas pollutants of stationary sources and control of mobile sources.

E1089 Environmental Toxicology (2/0): This course is concerned with toxicity tests, dose-effect relationships, biotransformation, acute and chronic effects, toxicity absorption, distribution, elimination, risk assessment and management, exposure and monitoring.

E1091 Environmental Impact Assessment (2/0): Topics include environmental impact assessment (EIA) law, procedure and framework of EIA, environmental quality index, technical guidance on EIA, EIA on water quality, health risk assessment, environmental monitor, case studies.

E1107 Engineering Materials (2/0): This course introduces students of engineering and physics to those areas of mathematics which, from a modern point of view, are considered the most important in connection with practical problems.

E1113 Environmental Chemistry (II) (0/2): This course focuses on the fundamentals of aquatic chemistry (including acid/base equilibrium, precipitation and dissolution, gas/liquid transfer, oxidation/reduction) organic and inorganic chemistry, and water quality analysis.

E1229 Fluid Mechanics (II) (0/3): This course includes the formation of Navier-Stokes eq. and its application in viscous flow, potential flow, pipe flow and submerged flow.

E1143 Environmental Planning and Management (3/0): The role of economics in environment management, modeling the market process, the market approach, command and control approach, environmental decision making, and benefit cost analysis.

E1144 Environmental Instrument Analysis (2/0): This course focuses on environmental analysis using chemical instruments, including metal analysis by atomic absorption, atomic emission, inductively coupled plasma spectroscopy, and ion chromatography. Chemical analysis for trace organic compounds by gas chromatography, high performance liquid chromatography, supercritical fluid chromatography and capillary electrophoresis are also covered.

E1397 Environmental Microbiology (0/3): This course introduces topics such as the classification of microorganisms, bacteria, observing microorganisms, stain, microbial growth, control of microbial growth, water and wastewater microbiology, eutrophication, soil and groundwater microbiology.

E1583 Introduction to Water Resources Engineering (1/0): This course explores topics such as the distribution of the world’s water resources, the hydrologic cycle, dams and reservoirs, water supply systems, flood control engineering, hydroelectric power engineering, irrigation and drainage, and water resources in Taiwan.

E1586 Soil and Water Conservation Engineering (2/0): Course topics include soil erosion, basic data inventory and analysis, the relation between soil and water, land use management, designs of dams, erosion control, and processes of land erosion.

E1682 Noise and Vibration Control (2/0): Topics include principles and practice of noise and vibration control. Several applications are discussed.

E1683 Soil Pollution and Remediation (0/2): This course focuses on the fundamentals that support
the treatment of a pollutant in soil coupled with design and operational techniques for remediation of contaminated soil, sludge and groundwater.

**E1687 Water Pollution Control (0/3):** This course covers the water pollution control act, effluent standards, control of municipal and industry wastewaters, investigation of point-source and non-point source pollutants, control of river pollution and eutrophication, groundwater pollution and control. Instruction is provided by means of case studies.

**E2175 Application of GIS for Engineers (0/3):** Basic database-related concepts are introduced in this course. By using ArcView 9.x as a tool, students learn about data management (ArcCatalog), the data frame, and the establishment of data layer. The use of spatial data, metadata, and spatial analyses is also introduced.

**E2720 Hazardous Waste (0/3):** This course will mainly lecture on the basic concepts of managing hazardous waste. It will introduce the common hazards, sources analysis, concepts on partition, theories on Sorption and exchange at surfaces, characteristics of volatilization, the abiotic and biotic transformations in nature, the dynamics of transport away from the source, the approaches to hazards and the design of selected pathway applications.

**E3235 Global Environmental Issues (0/2):** Introduction of the global environmental issues, exploring the reasons, the resolving methods, and the future development.

**E3320 Environmental Soil Science (3/0):** This course includes the basic concept of soil properties and the relations between soil and human habitats. It also includes the topic on how the soil is formed.

**E3321 Introduction to Environmental Biotechnology (0/2):** This course focuses on using microbes, animals and plants for controlling the environmental problems caused by human activities. Mostly, we will mainly discuss and use mathematical models to describe the phenomena of microbe activities.

**E3339 Open Channel Hydraulics Experiments (1/0):** Laboratory experiments are designed to provide the student with an understanding of the apparatus, techniques, and procedures used to measure hydraulic properties and to verify the fundamental principles of open channel hydraulics.

**E3356 Unit Operation and Laboratory for Environmental Engineering (0/3):** (1) Topics include theory of environmental unit operation processes such as reactor design, sedimentation, coagulation, filtration, ionic exchange, adsorption, membrane, and disinfection processes are introduced in this course. Students will become familiar with the unit operations through practice and implementation.

**E3358 Corporate Environment Management (0/2):** Business is always combined with environmental topics. Manufacturers also focus on those topics in the environmental management system. The environmental topics included green design, RoHS, climate worming reduction, Carbon dioxide deduction, green label etc. This course will introduce the fundamental concepts and operational experiences for those topics. It is helpful for students and enhance their own environmental management abilities.

**E3359 Hydraulic Modeling Software (0/3):** This course is designed to introduce the modeling softwares that are commonly used in hydraulic engineering, such as HEC-HMS, HEC-RAS, SWMM, and HSPF/BASINS. Through case studies, students will learn fundamentals of hydrology and hydraulics, hydrological data types, major components of the modeling software.

**E3374 Water-Resources Engineering (I) (0/3):** The course of water-resources engineering covers the design of system to control the quantity, quality, timing, and distribution of water to support both human habitation and the needs of the environment.

**E3572 Water Environment (I) (0/2):** This course will offer you to have a basic skill and knowledge to solve the problems of water resources management. You will learn about the integrated basic knowledge of Hydrology, Water Resources Management, Ecological Engineering, Environmental Management, etc.
E3573 Environmental Analysis (II) (1/0): In this course, students learn and apply current standard methods for water quality analysis. Water quality parameters such as N, SVI, hardness, and free chlorine are covered.

E3574 Engineering Statistics (I) (2/0): Many engineering problems are uncertain in nature. If what we need is an effective and quantitative representation for an uncertain event, or the statistical regularity of a phenomenon, then probability and statistics serve this purpose. Since probability is the foundation of statistics, this course introduces the basics of both fields.

E3575 Engineering Statistics (II) (0/2): Statistics enables engineers to make inferences and decisions about many problems. This course introduces the basics of several statistical methods: point estimation, confidence interval, hypothesis testing, and regression.

E3576 Practice of Projects (I) (2/0): Research topics will be designed by the lecturer or professional mentors from industry. By choosing research topics, students will learn how to find the relevant literature and establish methodologies, and will learn to conduct experiments. Students can acquire skills of independent research and conduct a project as a team.

E3577 Practice of Projects (II) (0/2): Research topics will be continued from Practice of Projects (I). Students will conduct experiments and discuss with lecturers and professional mentors. Students will have intensive team work experience to conduct a project.

E3578 Practice of Projects (III) (3/0): To enable undergraduate students to learn how to conduct research and collect information needed for research. Research topics will be designed by the teacher or professional mentors from industry. By choosing research topics, finding the relevant literature, establishing methodology, conducting experiments, and finally presenting research results, students can learn the skills and knowledge required for various stages of research, and at the same time can obtain the right attitude, develop active learning, independent thinking, and problem solving skills.

E3667 Environmental Analysis (III) (1/0): This course aims to familiarize students with monitoring and analyzing gaseous and solid waste pollutants using environmental analytical methods or instruments.

S0251 Foundation Engineering (0/2): This course introduces the science and art of applying the principles of soil and structural mechanics together with engineering judgment (the art) to solve the interfacing problem.

S0343 Environmental Chemistry (3): This course focuses on the fundamentals of aquatic chemistry (including acid/base equilibrium, precipitation and dissolution, gas/liquid transfer, oxidation/reduction) organic and inorganic chemistry, and water quality analysis.

S0483 Environmental Ecology (0/2): This course introduces the principles of ecology and the environment, as well as the relationship between them. The course includes discussions on the population problem, ecological theories, environmental pollution and protection, and trends in sustainable development.

B0370 Environment Economics (0/3): This course has two teaching goals. The first goal is to introduce the basic theory of environmental economics. The second goal is to teach the method of cost benefit analysis, so that the students possess the ability of policy evaluation.

E0594 Computer Programming (0/3): The course introduces the fundamental concepts of MATLAB programming language, including vectors/matrices, string, loops, plotting and visualization of data and importing/exporting data. By the end of the course the student will be able to translate mathematical method to Matlab code and evaluate the computational results using graphical representations. No previous programming experience is required.

D0331 Practicum in Educational Technology (1/0): Students go to the government, consultants, the research centers to experience for the workplace according to their choices. Students will discuss with teacher through internet or mail each week during the practical training period. The course aims to cultivate students who fit in the practical workplace.
E3566 Analysis of Environmental Pollutants (I) (0/1): Our focus will be the analysis of environmental relevant processes or compounds in the soil, water and air using classical and modern techniques. We will also focus on sampling and sample preparation methodology. Students will orally present a report based on an environmental chemistry case study.

E3666 Fluid Mechanics for Environmental Engineering (0/2): This course is designed to enhance student's capability in analyzing fluid dynamic problems encountered in water resource and environmental engineering. The content of the course is application and engineering design oriented.

E3694 Flood Control and Drainage Engineering (0/3): The purpose of this course is not only to enhance students' knowledge of flood control and drainage engineering, but also to improve their abilities for integrating and applying professional knowledge to solve flood problems.

S0482 Environmental Chemistry (I) (2/0): The purpose of this course is to understand the environment and the chemical processes and reactions that occur in it, especially in aquatic system. In the first semester, we introduce water chemistry, acid-base equilibrium chemistry and environmental chemical analysis.

V0067 Practice of Projects (0/2): This course is designed to improve students' understanding of hydrological and hydraulic engineering. Students will develop a comprehensive understanding of tools for hydrological analysis and modeling through conducting experiments in the lab, writing computer programs, using numerical models, software packages, etc.

Master’s Program

E0202 Solid Wastes Treatment (3/0): This course involves an advanced discussion about non-hazardous solid waste management, including differing perspectives, legislation, characteristics of waste, collection and transportation, pretreatment, transformation, final disposal and resource recovery and reuse.


E0434 Advanced Open Channel Hydraulics (2/0): This course covers basic equations for unsteady channel flows; the method of characteristics; simple waves; dam breaks; sluice gate operations; transitions for supercritical flow; flood waves; diffusion waves, and the numerical method (characteristic line and finite difference).

E0976 Water Quality Management (0/3): Topics include water pollution in Taiwan, water resource protection rules, sources of pollutants, investigation of point and non-point pollutant sources, reduction and control of pollutant sources, water quality models, and case studies.

E0977 Biological Treatment (0/3): The active sludge process; biochemical kinetics; oxygen transfer; trickling filter; anaerobic digestion; aerobic digestion; solid handling.

E1162 Aquatic Chemistry (0/3): Topics include: principles of chemical equilibrium; the effect of chemical interactions of domestic and industrial waste effluents on natural water systems; chemical principles involved in the treatment of water and wastewaters.

E1165 Hazardous Waste Management (0/2): This course focuses on management planning, definition and characterization, source, transportation and storage, treatment and disposal methods, minimization and recycling, the permitting process, site remediation, and legal mechanisms of hazardous waste.

E1361 Advanced Environmental Microbiology (0/3): This course focuses on the application of microorganisms in bioreactors that are dealing with various wastes including domestic wastewater, industrial wastewater, solid waste, and groundwater. In addition, both traditional and molecular
biological techniques for analysis of microbial communities will be introduced. Through lectures and discussions, students will understand the principles and potential of environmental biotechnology.

**E1683 Soil Pollution and Prevention (0/3):** This course introduces the fundamental concepts of the soil science and the prevention of soil contamination. It emphasizes the soil as a natural resource and soil as ecosystems. It highlights the many interactions between soil and other components of forest, range, agriculture, wetland and constructed ecosystems. The destiny of the pollutants in the soils will also be introduced.

**E2659 Remediation of Soil Pollution (3/0):** This course introduces the fundamental concepts of the soil science and the remediation of soil contamination. It emphasizes the soil as a natural resource and soil as ecosystems. It highlights the many interactions between soil and other components of forest, range, agriculture, wetland and constructed ecosystems. The case studies and remediation techniques will be emphasized on this course.

**E2684 Physical and Chemical Treatment Processes (3/0):** Topics include coagulation, filtration, ion exchange, disinfection, ozonation, advanced oxidation process, adsorption, membrane filtration, chemical oxidation, water reuse technology, drinking water and wastewater advanced treatment, concentrating, and dewatering.

**E3367 Water-Resources Engineering (II) (3/0):** The material falls into two distinct sections: (1) The first presents the fundamental theoretical concepts. (2) The second exemplifies some of the ways in which basic concepts maybe applied to the design of hydraulics system. A substantial number of worked examples are included in the texts. The coverage has been broadened to include flood hydrology, sediment transport and the areas of river engineering.

**E3830 Air Pollution Control Engineering (0/3):** The chemical and physical properties of gaseous and particulate air pollutants are reviewed. Then the principles that support the design and control process of air pollutants are introduced. Targeted gaseous pollutants includes volatile organics compounds (VOCs), sulfur oxidized (SOx), Nitrogen oxides (NOx). Solid air pollutants includes particulate matters (PM10, PM2.5). The control processes for gaseous pollutants include combustion control, flue gas control (Reduction/oxidation, absorption and adsorption processes). Various solid-gas separation processes are discussed for PM control. The processes applied in stationary and mobile air pollution sources are both discussed. The formation and control of semi-volatile organic compounds such as dioxins are also included. Finally the green house gases control such as CO2 sequestration techniques are introduced and reviewed.

**E1093 Neural Network (3/0):** The objective of this course is to present a study of artificial neural networks. Primary emphasis is on basic structures of neural networks, as well as learning algorithms and applications.

**E2737 Advanced Physical Chemical Treatment Processes (3/0):** Through reading journal papers, students understand and learn how to apply up-to-date environmental physical and chemical treatment processes in contaminant removal.

**E2862 (0/3) Sludge Treatment (0/3):** Exploring on the characteristics, liquid phase treatment, solid phase treatment and recovery methods of water and wastewater treatment sludge.

**E3804 Multiphase Flow Theory (3/0):** This course covers fluid mechanics, equations governing fluid dynamics, finite volume method, linear algebra, and so on.

**T0140 Seminar (1/1)**

Ph.D. Program

**E1093 Neural Network (3/0):** The objective of this course is to present a study of artificial neural networks. Primary emphasis is on basic structures of neural networks, as well as learning algorithms and applications.

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DEPARTMENT OF MECHANICAL AND ELECTRO-MECHANICAL ENGINEERING

Degrees Offered: B.S., M.S., Ph.D.

Chairman: Yin-tien Wang (王銀添)

The Department

History
The Department of Mechanical Engineering was founded in 1970 and offers Bachelor’s, Master’s, and Ph.D. degrees. The name was changed to Mechanical and Electro-Mechanical Engineering in 2002. Two major study fields including “Opto-Mechatronics” and “Precision Machinery” are provided in the Department of Mechanical Engineering and Department of Electro-Mechanical Engineering in 2010. The department has passed IEET accreditation since 2004.

Goals
The Department offers undergraduate and graduate degree programs in the fields of precision mechanical and opto-mechatronics engineering. These programs are designed to educate the students in the latest methodologies of engineering practice and to provide them with the fundamental training and logical thinking for continued growth throughout their professional careers.

Faculty
There are nine professors, three associate professors and one assistant professor.

Courses
There are basic professional courses such as mechanics, material, manufacturing, thermal and fluid mechanics, machinery design, automatic control, etc. Also offered are courses in advanced and applied fields such as precision machine design, advanced micro electro mechanical systems, controls of electric machinery, intelligent control, opto-mechatronics, micro-fluid mechanics, thermal system etc.

Research Laboratory

Special Features
The department focuses on the two major fields of precision machinery and opto-mechatronics. The faculty and staff have established a favorable environment for learning and research. Our objectives are to provide the students with professional knowledge and capability.

Faculty

Professor Emeritus
Zuu-chang Hong (洪祖昌); Chien-jong Shih (史建中)

Professors
Yin-tien Wang (王銀添); Choung-lii Chao (趙崇禮); Shung-wen Kang (康尚文);
Tzung-hang Lee (李宗翰); Ching-bin Lin (林清彬); Chao-hwa Liu (劉昭華);
Huoy-shyi Tsay (蔡慧駿); Lung-jieh Yang (楊龍傑); Fung-huei Yeh (葉豐輝);

Associate Professors
Ching-lun Li (李經綸); Jr-syu Yang (楊智旭); Chyan-chyi Wu (吳乾埼);

Assistant Professors
Degree Requirements

The department of mechanical and electro-mechanical engineering consists of two sections: the Division of opto-mechatronics and the Division of precision mechanical engineering.

1. Requirements for a degree of B.S. in the Division of precision mechanical engineering:
   Completion of 128 credits of courses, including 96 credits of required courses and 32 credits of elective courses.

2. Requirements for a degree of B.S. in the Division of precision mechanical engineering:
   Completion of 128 credits of courses, including 98 credits of required courses and 30 credits of elective courses.

3. Requirements for a master’s degree: (degree offered in 2 fields)
   Minimum number of credits: 26 credits, including 24 credits of elective courses and 2 credits of seminars. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member, and pass an oral examination.

4. Requirements for a Ph.D. degree:
   Minimum number of credits: 25 credits, including 21 credits of elective courses and 4 credits of seminars. Students are required to pass a qualifying examination in the first two years, publish at least two research papers in any journal listed in Science Citation Index, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Undergraduate Courses

**E0031 Engineering Graphics (1/1):** Graphic instruments and their use; graphic geometry; lettering; orthographic drawing and sketching; pictorial drawing and sketching; auxiliary views; sectional views and conventions; dimensions, notes, limits, and precision.

**E0034 Engineering Mathematics (3/3):** This course covers ordinary differential equations, vectors, matrices, Laplace transform, Fourier analysis, partial differential equations and complex analysis.

**E0165 Automatic Control (3/0):** This course covers the Laplace Transform, mechanical system modeling, stability of linear control systems, time-domain analysis, root-locus techniques, frequency domain analysis, and the design of control systems.

**E3210 Strength of Materials (I) (3/0):** This course addresses the following subjects: material properties, uniaxial force members, plane stress and plane strain, torsion of circular sections, stresses in beams, deflections of beams, and energy concepts.

**E0300 Fluid Mechanics (3/0):** Dimensional analysis and similitude, internal incompressible viscous flow, external incompressible viscous flow, introduction to compressible flow, steady one-dimensional compressible flow.

**E0629 Microprocessors (0/3):** The objective of this course is to introduce the software and hardware architectures of microprocessors. This course covers 8051 hardware, C language, assembly language, I/O interface, and memory systems.

**E0718 Computer Graphics (0/1):** The main purpose of this course is to teach students to use Auto CAD and Microstation to draw both two and three-dimensional engineering drawings.

**E0782 Heat Transfer (3/0):** This course covers the following subjects: basic modes of heat transfer, conduction, convection, natural convection, forced convection, heat exchangers, radiation, heat transfer with phase change.
E0815 Mechanism (0/3): Motion in machinery, velocity and acceleration analysis of mechanisms, transmission of motion, static and dynamic force analysis, balance of inertial forces, dynamic features of machinery.

E2886 Robotics (0/2): This course provides students with a basic conception of Robotics. Topics include kinematics and differential kinematics of robots, robot actuators, trajectory planning, robot perception, robot vision, and robot control. The robot systems concerned in this course include wheeled mobile robots and legged mobile robots.

E3207 Fundamentals of Precision Machine Elements (2/2): This course provides instruction on the design and application of standard precision machines. In particular, it emphasizes the correctness, accuracy and safety of the resultant design. It also emphasizes the production of creative and reliable designs. It is a fundamental course for modern mechanical system design.

E0828 Mechanical Drawing (1/0): This course covers the following subjects: section view; details and assembly drawing; the use of threads, fasteners, keys, rivets and springs; gear and cam; drawing of piping; welding; jigs and fixtures.

E0914 Precision Manufacturing (0/3): This course covers fundamentals and applications of various manufacturing processes such as the fundamentals of materials, machining processes, basic metal cutting theory, fundamentals of machine tools, non-traditional machining processes, forming processes, casting processes, joining processes, micro-nano fabrication processes, and automation and quality assurance.


E0722 Circuit Theory (3/0): This course introduces fundamental principles and analysis methods of electric circuits. The contents contain DC and AC circuits, transient and frequency responses of electric circuits, and AC power.

E2235 Computer Program Design (3/0): The purpose of this course is to introduce programming tools commonly used by scientists and engineers. This course includes the following subjects: (1) an introduction to programming; (2) input/output; (3) file processing; (4) decisions and the IF statement; (5) repetition and loops; (6) arrays; (7) functions and subroutines.

E2525 Strength of Materials (II) (0/3): The purpose of this course is to (1) teach students how to study mechanics, (2) introduce solutions of simple structures made of linear elastic materials, and (3) introduce failure modes including yielding, fatigue, and buckling.


E0902 Logic Design (3/0): This course covers the number systems and operations, logic gates, Boolean algebra, Karnaugh maps, combinational logic analysis, sequential logic and logic devices.

E0961 Electronics (0/3): This course covers semiconductors and diodes, bipolar junction transistors, field-effect transistors and power electronics, operational amplifiers, integrated circuit electronics, digital logic circuits, and digital systems.

E1559 Mechatronics (0/3): This course introduces each part of the control system while integrating the following sections: (1) electromechanical components; (2) interface circuit; (3) mechanical parts; and (4) feedback signal processing.

E2067 Control System Design (0/3): This is an advanced level program of automatic control. This course introduces control designs in frequency domain or state space methods. Topics include: frequency response of a linear system, control design by frequency response methods, state variable
models, and state feedback control.

E2157 Applications of Industrial Materials (3/0): This course is organized into three parts: (1) manufacturing, property and applications of the back-light modulus; (2) manufacturing, property and applications of fixable displays; (3) manufacturing, property and applications of optical films; (4) manufacturing, property and applications of white light LED.

M0022 Engineering Economics (3/0): This course introduces concepts and theories related to the Engineering Economy. The tools introduced can be used in making decisions, while the areas touched on include the production industry (e.g. IC packing, TFT-LCD, Notebook, machinery and Mechatronics), the bio-tech, and bio-medical industries. Throughout the course, decision making and risk control are studied and practiced.

E3403 Mechanism Design (0/3): The purposes of this course are to interest the students in mechanism design, to acquaint the students with techniques for mechanism synthesis, to make students competent to evaluate various mechanisms and to modify them. Topics include classifications of mechanisms, introductions to drivers, synthesis techniques, analytic skills, design evaluation, and case studies.

T0994 Key Issues in Career Planning (1/1): The purpose of this course is to help students develop the ability to think logically, and to enhance their problem-solving skills and techniques of expression. Logical thinking is developed by reading technical papers; while problem-solving skills are gained by solving engineering problems. Training in expression is carried out by writing reports.

E1108 Workshop Practice (1/1): The first topic discussed is woodworking, the second metal filing, the third metal removal processes—especially in turning—and the final, the welding process.

E1903 Analysis of Dynamic Systems (3/0): Topics in this course include: translational and rotational mechanical systems, electrical systems, analytical solution of linear models, Laplace transform and transfer function analysis, electromechanical systems, block diagrams, and computer analysis.

E1277 Mechanical Vibrations (0/3): Dynamics, oscillatory motion, free vibration, energy methods, forced periodic vibration, initial conditions and transient vibration, damping, damped forced vibration, two degrees of freedom, and nonlinear vibration.

E1954 Digital Signal Processing (0/3): The course will cover the concepts of continuous-time sinusoidal signals, discrete-time signals and systems, the frequency spectrum, and filter design. Students will improve their digital application ability in the control field.

E3209 Applied Physics (3/0): The course focuses on the application and property of the various classes of physics, Important topics include: electrical, semiconductor physics, superconducting physics, magnetic physics, dielectric, optical physics, modern physics and nano-physics.

E3299 Introduction to Optomechatronic Engineering (0/3): This course provides fundamental principles, design guidelines, and system integration techniques of optomechatronic systems. The content contains principles of photonics, principles of optomechanical design, signal processing and system interface techniques. The optomechatronic systems concerned in this course include laser encoders and laser writers.

E3088 Materials Science and Engineering (0/3): This course is organized into four parts: part one: Fundamentals; part two: Microstructure Development; part three: Property of Materials; and part four: Materials Synthesis and Design.

S0434 Thermodynamics (2/2): Concepts and definitions; properties of a pure substance; work and heat; the first and the second law of thermodynamics; entropy; power and refrigeration cycles; thermodynamics of mixtures; thermodynamic relations; chemical relations; phase and chemical equilibrium.

E0158 Introduction to Finite Element Method (0/3): The purpose of this course is to introduce the numerical method to solve practical physical problems. Course content includes the stiffness method, truss element, beam element, frame element, the plane stress and plane strain stiffness equation.
E0710 Computer Aided Design (0/2): This class is designed to introduce a person to the fundamentals of PTC’s Pro/ENGINEER software. Topics include sketch module, part module, assembling module, drawing module, mechanism module, and much more. Students will learn how to properly set up CAD projects using Pro/E. The goal of this course is to familiarize engineering students with fundamental principles of computer aided design and perform basic engineering design using solid modeling and parametric design using Pro/E software. At the end of this course, students will have created a project and will better understand CAD office standards.

E0715 Computer Aided Manufacturing (2/0): Computer aided manufacturing (CAM) is very important for mold development. This course involves the relationship between the structure, property, and morphology of mold design. The course also provides basic and advanced instruction on tool path programming. Students can anticipate applying CAM software and to finish their final project.

E3208 Principle of Precision Machine (3/0): This course aims to introduce the fundamentals and applications of Precision Machine Design. Topics such as Basic Principles of Accuracy, Repeatability and Resolution, Geometric Errors Analysis, System Design Consideration, Machine Structure of Precision Machines, Metrology System in Precision Machines, Sensors & Transducers in Precision Machines will be addressed and discussed.

E2222 Introduction of Precision Machining (0/3): This course covers fundamentals and applications of precision machining. Topics such as Introduction to Mechanical/Optical Metrology System, Introduction to Precision Machine Tools, Basic Principles of Precision Turning Technology, Basic Principles of Precision Grinding Technology, Basic Principles of Precision Lapping Technology, Introduction to Energy Beam Machining will be addressed and discussed.

E3485 Human Factor (3/0): Reducing error and influencing behavior is the key in understanding our approach to human factors. It gives a simple introduction to generic industry guidance on human factors, which it defines as: “Human factors refer to environmental, organizational and job factors, and human and individual characteristics, which influence behavior at work in a way which can affect health and safety” This definition includes three interrelated aspects that must be considered: the job, the individual and the organization. In other words, human factors are concerned with what people are being asked to do (the task and its characteristics), who is doing it (the individual and their competence) and where they are working (the organization and its attributes), all of which are influenced by the wider societal concern, both local and national. Human factors can, and should, be included within a good safety management system and so can be examined in a similar way to any other risk control system.

E3341 OPTO-Mechatronics Laboratory (I) (1/0): The experiments in this course include: Electromagnetic and photo sensors; microprocessor and PC-based controllers; DC motor drive and actuator; wireless communication; kinematic simulation of differentially-driven mechanism; and implementation of mechatronics using vision-based robot systems.

E3342 OPTO-Mechatronics Laboratory (II) (0/1): The purpose of this course is for students to conduct experiments to gain basic knowledge in mechanics, material properties, and metallography. In mechanics it includes solid mechanics, fluid mechanics, and thermal science.

E3343 OPTO-Mechatronics Laboratory (III) (1/0): The experiments in this course includes: Electromagnetic and photo sensors; microprocessor and PC-based controllers; DC motor drive and actuator; wireless communication; kinematic simulation of differentially-driven mechanism; and implementation of mechatronics using a vision-based robot system.

E3344 Precision Mechanical Engineering Laboratory (I) (1/0): The experimental course is organized into two parts: (1) Metallographic test; (2) Properties of materials test. Important experiments include tensile test, hardness test, impact test and fatigue test.

E3345 Precision Mechanical Engineering Laboratory (II) (0/1): The purpose of this experimental course is to introduce principles of fundamental electric devices and the usages of the corresponding application circuits. In the first half-semester, we focus on the characteristics presentations and usages of these fundamental devices. In the second half-semester, we introduce principles and related usage
techniques of fundamental application circuits.

**E3346 Precision Mechanical Engineering Laboratory (III) (1/0):** Experimental Fluid Mechanics: (1) the weir experiments (2) forced vortex (3) momentum experiment (4) Reynolds, (5) opening (6) meter line experiment (7) experimental jet trajectory. Thermal experimental: (1) fan performance curve wind tunnel tests; (2) concentric tube heat exchanger; (3) IC thermal impedance (4) heat conduction and convection (5) CPU Cooler thermal impedance measuring (6) heat transfer wind tunnel (7) vapor absorption refrigeration cycle.

**E3347 Precision Mechanical Engineering Laboratory (IV) (1/0):** Experimental Fluid Mechanics: (1) the weir experiments (2) forced vortex (3) momentum experiment (4) Reynolds, (5) opening (6) meter line experiment (7) experimental jet trajectory; Thermal experimental: (1) fan performance curve wind tunnel tests; (2) concentric tube heat exchanger; (3) IC thermal impedance (4) heat conduction and convection (5) CPU Cooler thermal impedance measuring (6) heat transfer wind tunnel (7) vapor absorption refrigeration cycle.

**E1907 Reliability Engineering with Applications (0/3):** This course deals with introductory concepts and theory of Reliability. The tools introduced can be used in making decisions and maintaining quality control. The areas applied include production industries (e.g. IC packing, TFT-LCD, Notebook, machinery and Mechatronics), biotech and biomedical industries. Decision making & risk control are studied and practiced.

**E0826 Machine Design (3/0):** The primary goals of this course cover the knowledge, analysis, design and application of general machine components. The particular interests emphasize the correctness and safety of the resultant design. This is a fundamental course for mechanical system design.

**E3340 Engineering Optics (2/0):** In this course, we will teach students the principles, phenomena, and components of optics. We will also explain the application of engineering optics. The contents of this course include geometric optics, physical optics, and opto-mechatronics.

**E1440 Industrial Control Engineering (0/2):** The basic principle and application of industrial control are introduced in this course. The major topics are sensors, hydraulic/pneumatic system, and the PLC (Programmable Logic Controller) programming and case study.

**E3660 Fundamentals and Applications of Engineering Metrology (0/2):** This course covers fundamentals and applications of engineering metrology. Topics such as Dimensional Metrology, Uncertainty Analysis, Optical Metrology, Surface Metrology, Machine Tool Metrology, Interferometers, Image analysis / Fringe analysis, Diffraction / Photoelectric detectors will be addressed and discussed.

**S0397 Applied Electric Circuits (2/0):** This course teaches communication protocol, microcontroller, industrial controller through implementation.

**E3717 Practical Operation Management of Mechatronics Industry (2/0):** It is widely understood that transitioning from a university environment to a business environment is quite difficult for students. To smoothly fit into an enterprise's operations, students need to adjust quickly to their new situation, as well as close the tremendous gap in knowledge between academics and application. The purpose of this course is to help students to understand: (1) How enterprises/companies operate, (2) Professional thinking/ Critical thinking. (3) The essential knowledge needed when working for contemporary industry.

**E3262 Engineering Application of Computers (I) (2/0):** This course will introduce the use of computer numerical principle, the principle of error handling, the numerical techniques for root finding and seeking within an interpolation, curve fitting and function approximation, numerical integration and differentiation, solving linear simultaneous equations, initial value problem-solving, boundary value problem-solving, the use of iterative method for solving simultaneous equations and other numerical methods. Ability in using MATLAB is also developed.

**E3263 Engineering Application of Computers (II) (0/2):** This course introduces how to use numerical methods in engineering analysis with the computer.
E3754 Internet Integrated Technology for Manufacturing (3/0): This course provides basic concepts of internet and communication protocol in manufacturing systems, and their applications in connecting microprocessors, personal computers, and industrial controllers. The microprocessor is used to collect the signal from various sensors; the personal computer executes the edge computing for the machine; the industrial controller is the control kernel of the machine tool. The students will implement many experiments to understand the practice internet technology for connecting the sensing devices, edge computing, and the machine tool.

Master’s Program

E0156 Finite Element Methods (3/0): This course covers matrix structure analysis of trusses, beams, and frames, energy principles, shape functions, stiffness matrices, load vectors, assembly of system equations, boundary conditions, isoperimetric formulation, constraints, axisymmetric problems, plates and shells, and dynamic problems.

E0424 Advanced Engineering Mathematics (3/0): Topics include: the method of eigen-function expansion, The Dirac delta function and its relationship to Green’s, Green’s functions for ordinary differential equations, and partial differential equations, calculus of variations, the Rayleigh Ritz Method, the perturbation method, and the similarity method.

E0629 Microprocessor (0/3): Objectives of this course include: (1) To teach the architecture of a micro-controller; (2) To show that a micro-controller can be programmed and be useful in everyday applications; (3) To introduce the basics of electronic design by constructing various interfaces of the micro-controller with other devices; and (4) To equip students with basic skills in electronic design and micro-controller programming.

E1847 Micro-Electro-Mechanical Systems (3/0): Prof. Chang Liu’s textbook “Foundation of MEMS” (Prentice Hall, 2006) is utilized thoughtfully throughout this course. Sensors and actuators that use electrostatic, thermal, piezoresistive, piezoelectric, and magnetic principles are discussed. Applications to polymer MEMS, Bio MEMS, microfluidics, optical MEMS and RF MEMS are also mentioned.

T1433 Research Method (I) (1/0): This course offers lectures on various subjects of mechanical and electro-mechanical engineering. The speakers are invited from industry, university, and related research institutes. Students will be encouraged to engage in discussion and will be required to hand in one report for each lecture.

E0445 Advanced Dynamics (0/3): Angular velocities and accelerations in moving reference frames; Eulerian angles and Euler parameters; constraints; Newtonian kinetics; energy principles; Lagrange’s equations; constrained systems; multibody systems; modeling of dynamic systems.

E2505 The Design of a Nano-Material Applied Bio-Chip (0/3): This course intends to develop students’ ability in biochip design with nano-materials. Current issues related to biomedical engineering will be mentioned. The type, the characteristics, and the present status of 4 ene chip, protein chip, DDS chip and Lab on a chip will be introduced. The types, properties and applications of nano-materials will also be discussed.

T1111 Research Method (II) (0/1): This course provides students with lectures on the various subjects of mechanical and electro-mechanical engineering. The speakers are invited from industry, universities, and related research institutes. Students will be encouraged to engage in discussion and will be required to hand in one report for each lecture.

E3532 Robotics and Vision (3/0): This course provides the student with some basic concepts of Robotics and vision. The topics include kinematics and differential kinematics of mobile robots, serial manipulators, and parallel manipulators; trajectory planning; robot kinematic control; robot perception, robot vision; image feature extraction, visual measurement, and location determination problem.

E0825 Mechanical Vibrations (3/0): This course focuses on the analysis of mechanical system vibrations. Topics will include dynamics of discrete systems, undamped and damped n-degree-of
freedom systems, and approximation of continuous systems.

**E2945 Viscous Fluid Flow (3/0):** The contents of the course include the following: vector and tensor calculus, introduction to the continuum fluid, conservation laws, static equilibrium of fluids and interfaces, the Navier-Stokes equations, unidirectional flows, approximate methods, and laminar boundary layer flows.

**E3835 Creative Mechanism Design (3/0):** The course introduces Yan’s creative mechanism design methodology for creative design in mechanical engineering. It helps students expand their creative talents in an effective manner. And, it supplies a powerful tool for design engineers to come up with fresh concepts to meet new design requirements and constraints, and/or to avoid patent protection of existing mechanisms/mechanical devices. The course objective is to educate senior and graduate students with systematic creative design capability regarding mechanisms and mechanical devices.

**E3850 Fundamentals and Practical Applications of Machinical and Mechatronics Engineering (3/0):** This course covers fundamentals and practical applications of Machinical and Mechatronics Engineering. Topics such as Basic Principles of Geometric Errors Analysis, System Design Consideration, Machine Structure/Mechatronics System of Precision Machines, Metrology System in Precision Machines, Sensors & Transducers in Precision Machines will be discussed and emphases will be placed on how to implement these principles in practical precision machine design.

**Ph.D. Program**

**T0095 Seminar (I) (1/0):** This course aims to strengthen students’ critical thinking and problem-solving skills in the specific areas of mechanical and electromechanical engineering. Course content includes information retrieval, reading and commenting on specific topics, building a research tree, oral presentations, and technical manuscript writing.

**T1002 Seminar (III) (1/0):** This course aims to strengthen students’ critical thinking and problem-solving skills in the specific areas of mechanical and electromechanical engineering. Course content includes information retrieval, reading and commenting on specific topics, building a research tree, oral presentations, and technical manuscript writing.

**E2938 Advanced Energy Conversion (3/0):** This course covers fundamentals of thermodynamics, flow and transport processes as applied to energy systems. Topics include analysis of energy conversion in thermomechanical, electrochemical, and photoelectric processes in existing and future power and transportation systems, with emphasis on efficiency, environmental impact, and performance. Applications include Concentrated Solar Power Stirling Engine Generation Systems, Thermal Storage Systems, fuel cells and batteries, and so on.

**T0096 Seminar (II) (0/1):** This course aims to strengthen students’ critical thinking and problem-solving skills in the specific areas of mechanical and electromechanical engineering. Course content includes information retrieval, reading and commenting on specific topics, building a research tree, oral presentations, and technical manuscript writing.

**T1003 Seminar (IV) (0/1):** This course aims to strengthen students’ critical thinking and problem-solving skills in the specific areas of mechanical and electromechanical engineering. Course content includes information retrieval, reading and commenting on specific topics, building a research tree, oral presentations, and technical manuscript writing.

**E0480 Control Theory (0/3):** This course offers a review of various topics in undergraduate control courses, topics in recently developed control theory, including analysis of control systems in state-space and design of control systems by using state-space methods.

**E2628 Special Topics on Micro Machining (3/0):** Based on the master's course of MEMS, the micromachining tech is taught thoughtfully in this course. Sensors and actuators using bulk machining, surface machining, CMOS machining, LIGA/LIGA-like process, and polymer process are discussed in detail.

**E3153 Numerical Simulations of Micro-Channel Flow (0/2):** The course is to train students in using
DSMC method to numerically simulate the dynamic fluid fields of micro-tunnels of micro-structures and the backflow zones behind the micro-structures. The performance for MEMS can then be substantially improved.

**E3378 Probabilistic Robotics (0/3):** This course covers some advanced topics in mobile robot navigation, including estimation methods, mobile robot localization, simultaneous localization and mapping (SLAM), moving object tracking (MOT), and data association. Students are required to read papers, do one small project, and present in the class.

**E3533 Functional Polymer Films (0/3):** This course introduces sputtering, chemical vapor deposition and kinetics of surface processes. The major contents focus on the vapor deposition processes, physical vapor deposition and chemical vapor deposition, and film formation and structure. The methodologies of analysis of thin film lithium battery will be briefly introduced.

**E3659 Precision Molding Processes (3/0):** This course covers fundamentals and applications of various precision molding processes. Topics such as formability properties, deformation mechanisms of materials, mold design/fabrication and parameters involved in injection molding processes, glass molding processes, hot embossing/UV-curing process, nano-imprint process and roll to roll process will be addressed and discussed.

**E3720 Advanced Heat Transfer (0/3):** The course will cover the following topics:
PART 1: Conservation equations, viscosity and stress terms, boundary layer equations for momentum, heat and mass transfer.
PART 2: Momentum and heat transfer for laminar boundary layers, laminar flow in pipes/ducts, turbulent boundary layers, turbulent flow in pipes/ducts, heat transfer by natural convection, influence of temperature-dependent fluid properties on convective heat transfer and friction.

**E3722 Special Topics on Micro Aerial Vehicles (II) (0/2):** This course provides an overall briefing of MAV technology from the theoretical background to the hands-on work of the flapping MAV “Golden-Snitch”.

**E3736 Computational Multiscale Fluid Dynamics (II) (0/2):** In fluid mechanics, multiphase flow is a generalisation of the modelling used in two-phase flow to cases where the two phases are not chemically related (e.g. dusty gases) or where more than two phases are present (e.g. in modelling of propagating steam explosions).

**E3801 Special Topics in Advanced Aerodynamics (I) (3/0):** This course covers all aspects of classical and modern aerodynamics. Topics include a brief review of theoretical, experimental, and numerical aerodynamics; the accomplishments and limitations of each method will be addressed with special interest in the application of aerodynamics on flight vehicle such as fixed-wing, rotary-wing, and flapping-wing airplanes. Problems related to modern quadcopter aerodynamics is also included.

**E3826 Special Topics in Rocket Engineering (I) (3/0):** The course “Special Topics in Rocket Engineering” concentrates on the subject of rocket propulsion, its basic technology, principles, performance, and design rationale. The course (I) covers the background and fundamentals. They give a classification of the various propulsion systems with the key applications, basic thermodynamics and nozzle theory, flight performance, and the thermochemistry of chemical propellants.
DEPARTMENT OF CHEMICAL AND MATERIALS ENGINEERING

Degrees Offered: B.S., M.S., Ph.D.

Chairman: Lai, Wei-chi (賴偉淇)

The Department

The Department of Chemical Engineering was founded in 1971 with the mission of providing the society with high-quality education pertinent to the chemical engineering discipline, in response to the rapid growth of petroleum and chemical industries. A 4-year undergraduate curriculum leading to the Bachelor of Science degree has been offered since then. To date, more than 6000 alumni have graduated and served in various industries globally. In 2003, the department was renamed “Department of Chemical and Materials Engineering” complying with the demands of the high-tech industry.

To pursue excellence in research, teaching, and service in the area of chemical, bio, and material engineering, graduate programs were established in 1992 (MS) and 2001 (PhD). By incorporating a wide selection of advanced courses and the opportunity of conducting independent research, students are trained to possess in-depth frontier knowledge, high-technical skills, and planning ability that are vital to their future careers in industry or academia.

In support of the broad triple-objective (globalization, information-oriented education, future-oriented education) of the University, the teaching and research activities of our department are being restructured and reactivated.

- Computer and software usage are incorporated into our core curriculum. Computer programming techniques are strengthened and applied to chemical process modeling, design, and problem solving.
- A series of courses focusing on material engineering, energy resource, and fine separation processes have been developed with contents conforming to the contemporary needs and future trends.
- Research is conducted on the basis of collaboration and teamwork not only within the department but also outside the University. Novel research topics are selected in parallel with the rapidly evolving scientific environment, the foremost of which being nano-technology, biomaterial, and environmental control.

The faculty and the staff of the Chemical and Materials Engineering Department are endeavoring to build the department into an internationally renowned center of excellence for research and education in its field.

Faculty

Professors
Chii-dong Ho (何啟東); Dar-jong Lin (林達銑); Gwo-geng Lin (林國賡);
Hsuan Chang (張煖); Hsuan-fu Yu (余宣賦); Liao-ping Cheng (鄭廖平);
Tung-wen Cheng (鄭東文); Trong-ming Don (董崇民); Rome-man Wu (吳宗銘); Wei-chi Lai (賴偉淇)

Associate Professors
Chao-ching Chang (張朝欽); Cheng-lan Lin (林正嵐); Yih-hang Chen(陳逸航);
Shih-chieh Hsu (許世杰)

Assistant Professors
Chao-tsai Huang (黃招財); Jia-lin Kang (康嘉麟)

Degree Requirements

1. Requirements for a degree of Bachelor in Engineering:
   Completion of 128 credits of courses, including 96 credits of required courses and 16 credits of elective courses in the program of chemical and materials engineering.
2. Requirements for a Master's degree in Engineering:
Completion of 27 credits of courses, including 3 credits of required courses and thesis courses.

3. Requirements for a Ph.D. degree in Engineering:
Completion of 24 credits of courses, including 4 credits of required courses and thesis courses.

Course Descriptions

Undergraduate Courses

**E0034 Engineering Mathematics (3/3):** A knowledge of calculus is a prerequisite for this course. This course begins with a detailed treatment of ordinary differential equations. Solution techniques for solving partial differential equations are then introduced. Matrix methods are also covered.

**E0067 Separation Processes (0/3):** Prerequisite: Transport Phenomena and Unit Operations II. This course covers the application of unit operation principles in designing process separators such as heat exchangers, evaporators, distillation columns, extractors, absorbers and other separation equipment.

**E0080 Chemical Engineering Thermodynamics (3/0):** Prerequisite: Physical Chemistry. Study of system properties is due to changes of state for pure substances or mixtures. Energy balance and entropy balance in chemical engineering process as well as prediction and calculation of equilibrium state variables are covered.

**E0081 Chemical Engineering Equipment (0/3):** Prerequisite: permission of the instructor. This is an introductory course concerning basic structures and principles of equipment used in chemical processes such as transportation of fluids and solids, powder technology, heat exchange, crystallization, evaporation, distillation, and gas absorption.

**E0084 Chemical Reaction Engineering (0/3):** Prerequisite: Physical Chemistry. This is an introductory course covering chemical engineering kinetics, design and analysis of ideal reactors, both homogeneous and heterogeneous, isothermal and non-isothermal, and a discussion of non-ideal flow patterns.

**E0091 Solar Energy Engineering (0/3):** This introductory course emphasizes the principles of solar energy use and provides updated information on the development of solar energy technologies and solar energy applications.

**E0182 Materials Science (0/2):** An introduction to the applied physical and chemical principles of materials, and a presentation of fundamental types of engineering materials.

**E0419 Polymer Processing (0/3):** This course will describe the polymer processing methods, polymer melt rheology, and the design of polymer products. We will introduce the fundamental topics that are associated with processing of both thermoset based composites and thermoplastic polymers. These include impregnation, consolidation, and performing techniques.

**E0597 Process Control (2/0):** Prerequisite: Engineering Mathematics. This is an introductory course covering process dynamics, computer simulation, command control, and a discussion in measurement and control hardware, and some advanced control strategies.

**E0803 Material and Energy Balances (2/0):** An introduction to the basic principles and calculations of chemical engineering, presentation and discussion of mathematical procedures, material balance, fluid properties, and energy balance.

**E0879 Introduction to Environmental Engineering (0/3):** The goals of this subject are to lead the students to understand the basic problems about the environment, the treatment technologies for air, water, and solid waste pollution, the concepts for resource recycle and recovery, and the ISO 14000s. The class will move forward with slides by PowerPoint. Students are asked to turn in a Chinese translation of an English academic journal article about specific topics to enhance their learning abilities.
E1053 Introduction to Chemical Process Safety (0/3): The objective of this course is to encapsulate the important technical fundamentals of chemical process safety. The emphasis on the fundamentals will help the students understand the concepts and apply them accordingly. This application requires a significant degree of fundamental knowledge and technology.

E1099 Transport Phenomena and Unit Operation I (0/3): Prerequisite: Engineering Mathematics. This is an introduction to momentum transfer and its application to fluid mechanics. This course includes topics in momentum balance, flows in pipes and channels, turbulent flow, multiphase flow, flow of compressible fluids, flow and pressure measurement, liquid mixing, and pumping of fluids.

E1100 Transport Phenomena and Unit Operation II (3/0): Prerequisite: Transport Phenomena and Unit Operation I. This course covers the transport phenomena of heat and mass. The course introduces the application of conservation laws (equations of energy and continuity for components in a mixture) in various process conditions.

E1213 Biological and Chemical Engineering (0/3): This course introduces the content of bio-industry to students, and helps them to learn how to apply the core knowledge of chemical engineering to bio-industry.

E1247 Electrochemical Engineering Principles (0/3): The goal of this course is to outline the basic principles and modern methodology of electrochemistry. Topics include potentiometry, voltammetry, electrochemical titrations, a practical, up-to-date summary of indicator electrodes, solvents, electrolytes and electrochemical cells and instrumentation for useful electrochemical measurements.

E1365 Polymer Physics (0/3): The relationship between polymer physical properties and chemical structures; glass transition and melting temperature; polymer morphology; polymer crystallization kinetics; polymer solution.

E1862 Waste Minimization for Chemical Processes (3/0): Concepts and methodologies of pollution prevention and waste management are introduced. A particular focus is on chemical processes, emphasizing emission estimation, life-cycle assessment, waste audits and emission inventory, pollution prevention for both unit operation and flow sheet levels.

E1864 Introduction to Semiconductor Processing (3/0): This course chiefly introduces a sketch of the semiconductor procedure. The discussion contains the main production equipment in business world, manufacture principles and procedures. We hope the students with the background of fundamental physics and chemistry or those interested in the semiconductor procedure will take this optional course.

E2342 Introduction to Polymeric Materials (3/0): Any large molecule that is formed from a relatively large number of smaller units with covalent bonding is called a polymer. In this course, we will discuss about (1) the basic definition and classifications of polymers, (2) molecular weight and molecular weight distribution, (3) synthetic methods and reaction mechanisms, (4) structures and properties of the polymers, (5) major applications of polymeric materials (plastics, rubbers, fibers, coatings and adhesives.

E2538 Biomaterials Engineering (3/0): This course is open for those who would like to understand the preparation and applications of biomaterials. Based on the recent development of artificial organs, students are expected to be able to enhance the basic concepts and professional ability involved in the control design of biomaterials.

E2541 Introduction to Separation Process Principles (0/3): This course introduces Unit Operation and Transport Phenomena of Chemical Engineering.

E2549 Inorganic Materials (0/3): This course addresses crystal structures, synthesis, and applications of inorganic materials. Recent developments in relevant topics will also be covered.

E2550 The Physics and Chemistry of Solids (0/3): This course is concerned with the structures and properties of solids. The level is designed to be introductory in nature. The subject matter is divided into three sections: structures and microstructures, reactions and transformations, and physical
properties.

**E2551 Chemical Engineering Laboratory I (1/0):** Prerequisite: Transport Phenomena and Unit Operation I. There are five parts in this course: determination of efflux time, screen analysis and cyclone separator, fluid flow, frame and plate filtration, and the practice of combining pipelines.

**E2552 Chemical Engineering Laboratory II (0/1):** Prerequisite: Transport Phenomena and Unit Operation II. There are five experiments in this course: jacket type heat exchanger, shell and tube heat exchanger, thermal conductivity of solids, fluidization and fluidized bed heat transfer, and film evaporation.

**E2553 Chemical Engineering Laboratory III (0/1):** Prerequisite: Separation Processes. Four experiments are included in this course: batch plate and packed distillation column, wetted wall gas absorption column, liquid-liquid extraction, and packed column absorbers.

**E2554 Materials Engineering Laboratory (1/0):** This experiment consists of 5 topics. Students will learn about the preparation of materials such as polymers, membranes, and micro-particles through chemical and physical methods. The physical or mechanical properties are then characterized.

**E2825 Chemical Process Computer-Aided Design (0/3):** This course studies the use of process simulation software, such as Aspen Plus and Aspen Dynamics, for unit operations and process flow-sheet design, as well as the use of various mathematical tools, such as Matlab and Polymath, to conduct data analysis in process design.

**E3063 New Energy Materials (3/0):** This course is to introduce many kinds of new energy (green energy) materials. The properties and manufacturing processes of the new energy materials are described. The new energy materials contain solar cell materials, fuel cell materials, biomaterials, etc.

**E3126 Introduction to Nanomaterials (0/2):** This course is an introduction for students to learn the fundamentals of nanomaterials, including structures, properties, preparations, and applications.

**E3350 Introduction to Chemical and Materials Engineering (1/0):** The goal of this course is to introduce the history, present status and future developments of chemical engineering. An introduction to the chemical engineering related industries and activities as well as the role and responsibility of a chemical engineer are also the major goals of this course.

**E3559 Lectures on Chemical Materials (2/0):** This course covers the current status of the chemical material profession, providing students with pre-job orientation. It does this in part by inviting lecturers from chemical materials companies and research centers, including R&D directors, CEOs and other officials.

**E3563 Optoelectronic Material and Technologies (3/0):** This course includes the following subjects: introduction of crystal growth process; the vapor crystal growth process (Thin-film deposition techniques); overview of fabrication using nanotechnology; high brightness LED process and application; the fabricate process in the solar cell; introduction of Liquid Crystal Display techniques.

**S0108 Organic Chemistry (2/2):** This course is designed for students to learn the fundamentals of organic compounds, including nomenclatures, structures, properties, reactions, and synthesis.

**S0111 Organic Chemistry Laboratory (1/0):** Students learn the principle of organic chemistry through doing hands-on experiments. The former parts of this course are spent learning techniques in organic chemistry, including recrystallization, distillation, extraction, crystallization, and column/thin-layer chromatography. Once these techniques are learned, they are employed in the later five labs of the semester. These experiments are designed to let students not only get familiar with various lab techniques, but also are able to observe the detailed reaction changes at each step.

**S0143 Physical Chemistry (3/3):** The basic ideas of work, heat, and energy are introduced. The laws of equilibrium thermodynamics are developed and employed in solving practical engineering problems such as mixing, phase equilibrium and chemical equilibrium. Topics in chemical kinetics are presented with an emphasis on the rate laws and mechanisms of chemical reactions. Quantum mechanics and statistical thermodynamics are briefly introduced.
S0146 Instrumental Analysis Lab (0/1): This course covers the major principle of instrumental analysis that the students learned from the lecture, and allows students to experiment with the essence of instrumental analysis first hand. This class provides the basic training to meet the future challenge from research and work places.

S0148 Physical Chemistry Lab (0/1): Students learn physical chemistry by doing experiment themselves. Through the course design, students not only get familiar with the basic concept, but also gain insight into the principle of physical chemistry.

S0195 Polymer Chemistry (3/0): Topics include molecular weight distribution, chain polymerization, step growth polymerization, stereo-specific polymerization, physical properties and microstructure of polymers, applications of polymers and industrial processes.

S0288 General Chemistry (2/2): The goal of this course is to introduce the fundamentals and applications of data processing and analysis, titration methods and electrochemistry in analysis chemistry.

S0289 General Chemistry Lab. (1/1): In this course we aim to teach the freshmen some basic skills of performing general chemistry experiments. Through hand-on practice, students can strengthen the related knowledge of the general chemistry course.

S0290 General Physics (2/2): The purpose of this course is to introduce the basic concepts and principles of physics. It includes: mechanics, mechanical waves, and thermodynamics.

S0307 Process Design (3/0): Prerequisite: Separation Processes. This course focuses on the application of knowledge taught in the core courses of chemical engineering and economics. In doing so, it facilitates the design and operation of chemical processes. During the course, students are required to carry out a design project.

S0325 Calculus (2/2): This course introduces the theory of the Calculus, the calculation approaches and its applications. We aim to improve students’ interests in learning and to develop their thinking and computing abilities.

S0415 Instrumental Analysis (2/0): Prerequisite: Analytical Chemistry, Organic Chemistry, Physical Chemistry. This course offers an introduction to the principles of spectroscopic, electrometric, and chromatographic methods of analysis. After taking this course, students should understand methods of sample treatment and preparation, data analysis, various components of instruments, theories and applications of various instrumental methods of analysis.

S0960 Introduction to Biotechnology (3/0): The course presents an introduction to the historical background aspects of biotechnology. The points of our discussion include food, human health, and environmental problems.

T0136 Research Seminar (1/1): Prerequisite: Restricted to chemical engineering seniors.

Master’s Program

E0459 Advanced Transport Phenomena (0/3): The contents of this course contain the fundamentals of momentum, heat and mass transfer, and the course instruction focuses on the development of a mathematical model to the analysis of an engineering system.

E1235 Advanced Chemical Engineering Thermodynamics (3/0): Thermodynamic properties of pure materials and mixtures; criteria of equilibrium for homogeneous and heterogeneous systems; correlation and estimation of properties, consistency testing and availability analysis of chemical processes.

E1248 Advanced Chemical Reaction Engineering (3/0): Analysis of unsteady state reactors, multiphase reactors, non-ideal reactors, stability and sensitivity, non-elementary reactions, and special topics of current interest.
E1363 Principles of Polymer Processing (3/0): The purpose of this course is to provide the basic background needed by polymer engineers to (1) determine experimentally and interpret the rheological behavior of polymer melts and (2) apply it to analyze flow in processing operations.

E1517 Membrane Separation Processes (0/3): The topics of this course include introduction to the fundamentals of membrane and membrane separation process, membrane materials and the preparation techniques, measurements of membrane characteristics, transport mechanisms in membranes, driving forces of membrane process, polarization phenomena and membrane fouling and the applications of membrane process.

E1606 Ceramic Microstructure Processing (3/0): This course shows the effects of microstructures on the properties of advanced ceramic materials and discusses the methods of ceramic processing and their effects on the characteristics of ceramic products. Also, the application and importance of the materials phase diagrams on the ceramic processing is discussed.

E1786 Advanced Ceramic Powder Synthesis (3/0): Traditional and unconventional techniques for advanced ceramic powder synthesis are the main focus of this course. The effects of characteristics of the ceramic powder on the performance of final products are also discussed.

E1817 Advanced Process Analysis and Simulation (3/0): The objectives of this course are twofold. First, it is an introduction to the principles of model building and skills needed for the application of mathematical models. Secondly, numerical analysis for solving system equations of mathematical models in science and engineering will be introduced.

E1932 Advanced Polymer Chemistry (0/3): Mechanisms of step-growth polymerization and chain polymerization are expanded in detail. Molecular weight, physical properties, and chemical modification of polymer are discussed.

E2128 Process Integration (0/3): This course introduces the concept and methodologies for process heat integration, water integration and waste minimization. Pinch design methods as well as other systematic methods are also taught.

E2514 Materials Structure and Properties (3/0): This discipline of materials science and engineering considers the behavior of materials and is concerned with the structure, properties and performance of these materials. Understanding the relationship between properties and structures can allow students to make more effective application of the materials.

E2769 Advanced Polymer Physics (0/3): This course offers detailed discussion on the interrelationships between structure, morphology, and physical and mechanical properties of polymers. Emphasis is placed on discussing the role of configuration and conformation in determining the physical behavior of polymers.

E2770 Advanced Solid-State Physics and Chemistry (0/3): The course is designed for advanced concepts of solid physics and chemistry. Students can apply that knowledge and skills to their future work.

E3034 Special Topics of Material Characterization (3/0): 1. Introduction to analytical techniques of material including spectroscopy (IR, UV), mechanical and physical properties (tensile strength, viscometer), optical and electronic microscope. 2. Practice of preparation of sample from raw materials; practice of chemical, physical and morphological measurements.

E3037 Advanced Electrochemical Engineering (0/3): The field of electrochemistry includes many different phenomena (e.g., electrophoresis and corrosion), devices (electro analytical sensors and batteries), and technologies (the electroplating of metals and the large-scale production of aluminum and chlorine). In addition to an overview of the basic principles of electrochemistry, the main emphasis here is on the application of electrochemical methods to the study of chemical systems.

E3038 Applications of Computational Fluid Dynamics Software (0/3): This subject shows some examples of engineering problems solved by CFD software FLUENT. Students will learn FLUENT to
solve their problems.

**E3445 Technical Writing (1/0):** This graduate course provides a methodological approach in guiding Chinese students to get a technical manuscript published. Selected papers published in the related fields will be demonstrated and discussed throughout this course.

**E3596 Practice and Applications of Chemical Engineering and Technology (0/3):** The purpose of this course is to present the core knowledge of chemical and materials engineering necessary to develop and apply technologies. The subjects include literature survey, research plan preparation, experimental system design and experiments, results analyses and writing a technique report.

**E3597 Practice and Applications of Materials Engineering and Technology (3/0):** This course allows students an opportunity to lay a solid professional background for applied material engineering.

**E3630 Special Lectures on Engineering Ethics and Industrial Practice (0/2):** The goal of this course is to provide some practical guidelines for students to become chemical and materials engineers. It covers theoretical background, industrial applications, engineering ethics and occupational safety, patent and confidential issues, career potential, and practical training knowledge.

**T1555 Seminar I (1/0)**

**T0993 Seminar II (0/1)**

**T2795 Seminar III (1/0)**

**T8000 Thesis (0)**

**Ph.D. Program**

**E0091 Solar Energy Engineering (0/3):** This course emphasizes solar applications in buildings, industrial process heat, thermal conversion to electrical energy generation, and evaporative processes. This course is aimed entirely at the development of students’ ability to present quantitative methods for estimating solar process performance.

**E0137 Petroleum Process Engineering (3/0):** This course deals with the more traditional topics in chemical engineering. The following topics will be covered: petroleum refining, crude topping, vacuum distillation, catalytic reforming, catalytic cracking, alkylation processes, residue oil conversion, gasoline blending, reformulated gasoline blending, naphtha cracking, derivatives of ethylene/propylene/butadiene, derivatives of aromatics/synthetic gas. Additionally, each individual student should carry out a case study.

**E1362 Process Dynamics and Its Applications (0/3):** An understanding of the process dynamic behavior is important from both the standpoints of process design and process control. While it is easy to design a chemical process based on steady-state considerations in real-world situations, it might be uncontrollable in the light of dynamics.

**E1851 Paper Writing Technique (1/0):** The skills for writing technical paper and report are introduced. The key elements include: title, authors, introduction, method, results and discussion, conclusion, references, acknowledgement.

**E2311 Physical Properties of Particulate Solids (0/3):** Many raw materials and products used in industrial processes, such as ceramic, medical, fine chemicals, material and chemical engineering, are particulate solids. This course introduces the characteristics, physical properties and behavior of systems containing solid particles. The applications in property measurements, fine particle manufacturing, packing of particles, flow through porous media, particle mechanics and rheology of slurries. The handling of bulk solids is also described and discussed.

**E2313 Chemical Engineering Separation Techniques (0/3):** Unusual techniques unknown to most chemical engineers are discussed, such as thermal diffusion, zone refining, and membrane extraction.
E2314 Transport Phenomena in Materials Processing (0/3): Phase transformations and interfacial phenomena are typical subjects of interest in material processing. Transport phenomena play certain roles in these processes, which will be discussed in this course.

E2366 Selected Topics in Polymeric Membranes (0/3): The main topics in this course include: thermodynamics of polymer solutions, multi-component diffusion, electron microscopy of membranes, X-ray analysis of membranes, membrane surface modification using plasma polymerization, composite membranes.

E2367 Polymer Morphology (3/0): This course conducts detailed discussion on the important subjects of the form and structure of polymer materials. Emphasis is placed on discussing morphologies of crystallized polymers, liquid crystalline polymers, polymer blends, block copolymers, and morphologies associated with processing. The use of optical, electron and force microscopy to investigate polymer morphology is also discussed.

E2368 Colloid Science and Interface Phenomena (0/3): Colloid science and interface phenomena are very important in many industrial technologies, such as ceramic, medical and many fine chemical and material engineering processes. This course introduces the characteristics and the interface phenomena of colloids. Many applications of colloid and surface science are also described and discussed.

E2369 Advanced Mathematical Methods in Chemical Engineering II (0/3): This graduate course covers the theory, properties, and relations to physical problems of partial differential equations. Emphasis is placed on the importance of correct problem formulation through the use of physical reasoning. An attempt to provide a guide of understanding and appreciation on numerical methods is included.

E2371 Select Topics of Membrane Filtration (3/0): Membrane filtration can be applied to the separation of fine particles and/or molecules ranging from sub-micro to nano scales. In this course, the fundamentals and applications of the membrane filtration processes, including microfiltration, ultrafiltration, nanofiltration and reverse osmosis, will be described.

E2373 Biodegradable Polymers (3/0): This course offers a chance to understand technologies for synthesizing, testing, evaluating, and disposing of biodegradable polymers. In this course, we will discuss structures, properties, and applications of polyglycolide and polylactide, polycaprolactone, poly(hydroxyalkanoates), polyanhydrides, biodegradable hydrogels, gelatinized starch products, cellulose, and protein. In addition, we will discuss degradation mechanisms of biodegradable polymers, test methods and standards for biodegradable plastics.

E2461 Thermodynamics and Kinetics of Polymerization (3/0): In this course, it is assumed that students are already familiar with the concepts and methods of chemical thermodynamics and chemical kinetics. In part I, the basis of thermodynamics of polymerization developed on traditional lines will be considered. Part II presents a brief introduction of the statistical methods employed for analyzing polymerization kinetics phenomena.

E2518 Advanced Separation Techniques in Chemical Engineering (3/0): Unusual techniques not familiar to most chemical engineers are discussed in this course, such as thermal diffusion, zone refining, dialysis, membrane extraction and membrane gas absorption. Separation techniques explored in this course will be of a relatively advanced level.

E2544 Scaling Concepts in Polymer Physics (0/3): A single chain, polymer melts, polymer solutions in good solvents, incompatibility and segregation, polymer gels, dynamics of a single chain, many-chain systems, entanglement effects, calculation methods.

E2834 Special Topic in Membrane Distillation Processes (3/0): A special topic on membrane distillation is a high-purity technique of possibilities. This course will discuss a practical application with emphasis on process description, key unit operations, plant equipment description, equipment installation, safety and maintenance, process control and plant start-up, operation and troubleshooting.

E2844 Special Topics in Solid State Physics (0/3): Optical aspects of solids, review of semiconductor
physics, detectors and generators of electromagnetic radiation.

**E2934 Controlled Drug Delivery (0/3):** This course covers the following topics: historical perspectives of drug delivery systems; carrier materials for drug delivery; the membrane-based drug delivery system; the mass transfer and modeling of controlled-release devices.

**E2979 Characterization and Analysis of Material Properties (3/0):** (1) Safety operations in the laboratory; (2) Preparation of polymer membranes and the mechanism of membrane formation; (3) Analysis of surface properties of membranes by ATR-FTIR, contact angle, UV-visibility, N & K; (4) Analysis of mechanical and thermal properties using the Tensile Test, DMA, TGA, DSC; (5) Analysis of structure and micro-morphology by XRD, SEM, POM; (6) Measurement of polymer molecular weight by Viscometer, GPC, SLS.

**E3444 Colloid and Surface Phenomena (0/3):** The colloidal Science and surface chemistry are studied in this course. Several applications in this field will be discussed.

**E3487 Membrane Separation Processes (3/0):** This course includes the introduction of fundamental knowledge of membrane and membrane separation processes, membrane filtration and separation principles, membrane fouling analysis and mitigation, and membrane module design, etc. Several special topics for membrane technology and applications, such as membrane methods in water and wastewater treatment, desalination based on membrane processes, membrane methods for biopharmaceutical product purifications, are selected and discussed thoroughly.

**E3625 The Technology for Opto-electronic Thin Film (3/0):** In comparison with bulk materials, thin films, such as 2-D microscope materials, have quite different properties. Such films are very useful and widely used in optoelectronic industries. This course focuses on the application of thin film materials.

**E3626 Advanced Polymer Physics in Solid State (0/3):** This course examines the relationship between polymer physics in solids and the chemical properties; glass transitions and melting temperatures; polymer morphology; polymer crystallization kinetics.

**E3627 Special Topics on Optically Instrumental Analysis (0/3):** This course focuses on the principle and application of optical instruments. We also introduce the development of optical analysis of materials.

**E3690 Special Topics on Light-emitting Diodes (3/0):** This course focuses on the theory, fabrication, and market trends of light-emitting diodes. Discussion and presentation are emphasized in the classes.

**E3692 Advanced Analytical Electrochemistry (3/0):** The goal of this course is to introduce advanced electrochemistry theories as well as electroanalytical methods, and their related applications.

**T0095 Seminar (1):** Guest speakers from other institutions and Ph.D. students of the Chemical Engineering department offer sessions in advanced Chemical Engineering and Material Science subjects.

**T0096 Seminar (II) (0/1)**

**T1002 Seminar (III) (1/0)**

**T1003 Seminar (IV) (0/1)**

**T8000 Thesis (0)**
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Degrees Offered: B.S., M.S. and Ph.D.

Chairman: Wei-Bin Yang (楊維斌)

The Department

Established in 1971 as the Department of Electronics Engineering and renamed in 1992, the Department of Electrical Engineering offers both regular and evening classes for undergraduate students. Graduate programs for Master’s and Ph.D. degrees began in 1993 and 1997. A Master’s program in Robotics Engineering was established in 2007. Since August 2015, it was renamed as the Department of Electrical and Computer Engineering.

Currently, the Department has 24 full-time faculty members, all with Ph.D. degrees. Specialized research areas include: microwave applications, signal processing, pattern recognition, neuro-fuzzy systems, automatic control and power systems, VLSI design and electrical circuit systems, computer engineering, semiconductor devices and optical fiber communication systems, wireless communication systems, next generation communication systems, mobility computation, and non-linear and dynamic controls.

Research facilities include the Optical Fiber Lab, VLSI Lab, Automatic Control Lab, Microwave and Communication Lab, Parallel Processing Lab, Multimedia Lab, Cybernetics Lab, Signal Processing Lab, and Electrical Motor Lab, etc., in addition to basic experimental labs.

A minimum of 128, 30, and 30 credits, respectively, are required for the Bachelor, Master’s, and Ph.D. degrees. A thesis is required for both Master’s and Ph.D. degrees. The Department is divided into three major categories for academic study: namely, Communication and Microwave Systems, Control Chips and Systems, and VLSI Design and Computer Systems. For the graduate program of Robotics Engineering, the two major study areas are Intelligent Evolution, and Embedded Systems.

Faculty

Professors
Jen-Shiun Chiang (江正雄); Chien-Ching Chiu (丘建青); Po-Jen Chuang (莊博任);
Yang-Han Lee (李揚漢); Ching-Lieh Li (李慶烈); Ching-Chang Wong (翁慶昌);
Wei-Tsong Lee (李維聰); Tsu-Tian Lee (李祖添); Chun-Fei Hsu (許駿飛);
Jin-Yuan Liu (劉金源)

Associate Professors
Yung-Shan Chou (周永山); Jiann-Chyi Rau (饒建奇); Chun-Liang Yang (楊淳良);
Chi-Hsiao Yih (易志孝); Chien-Hsing Chou (周建興); Wei-Bin Yang (楊維斌);
Peter Liu (劉寅春); Chi-Yi Tsai (蔡奇謙); Horng-Yuan Shih (施鴻源);
Hsin-Wen Wei (衛信文)

Assistant Professors
Shih-An Li (李世安); Kelvin Lee (李光啟); Yu-Jen Chi (紀俞任);
Chih-Cheng Liu (劉智誠)

Degree Requirements

1. Requirements for a Bachelor of Science degree in Electrical and Computer Engineering:
   Completion of 128 credits of courses, including 97 credits of compulsory courses and 31 credits of elective courses.

2. Requirements for a Master’s degree in Science: 
Completion of 30 credits of courses studies, including 6 credits from the following compulsory courses: Technical Paper Written and Presentation, Electrical Teaching and Training, Introduction to Intellectual Properties. Students are required to publish at least one technical paper in any major conference or journal, complete a Master’s thesis, and pass an oral examination under the supervision of a faculty member.

3. Requirements for a Ph.D. degree in Science:
Completion of 30 credits of courses. Students are required to pass a qualifying examination in the first two years of being accepted into the Ph.D. program, publish at least one technical paper in any journal listed in the Science Citation Index (SCI), complete a doctoral dissertation, and pass an oral examination under the supervision of a faculty member.

Course Descriptions

**Undergraduate Courses**

**A1927 Digital Images Processing (2/0):** Digital image processing has become one of the most popular courses in computer science and electrical engineering. The techniques of digital image processing have been rapidly developing and have been widely adopted in numerous applications. This course will introduce the mathematical foundations and practical techniques for digital manipulation of images. Students will learn spatial and frequency image processing, segmentation, wavelet processing, color image processing, and compression.


**E0122 Semiconductor Devices (0/3):** Semiconductor devices are the key building blocks of modern-day electronics, including ultra-large scale integration circuits. This course gives a general introduction to semiconductor devices, including PN junction diode, bipolar transistor, JFET and MESFET, and MOSFET. The course is designed for junior undergraduate students who have already taken a course in fundamental semiconductor physics or its equivalent.

**E0175 Operating Systems (3/0):** The course Operating Systems is designed for managing system resources, such as CPU, memory, and storage. This course will introduce the basic concept of operating systems, including system structures, process concept, process scheduling and management, process synchronization, memory management, etc.

**E0334 Computer Organization (3/0):** Introduction and historical development of computer classification, stratified analysis the real mode of operation of computer systems, and a description of how a computer performs the process of programs and instruction.

**E0350 Computer Network (0/2):** The course will begin with layered network architecture and communication protocols. Then actual monitoring of the data packets transmitted via network by tools such as WireShark and Estinet will also be discussed. At the end of semester students should deliver a term project to demonstrate their comprehension of a computer network.

**E0479 Control Systems (3/0):** Introduction to the analysis and design of control systems from the time-domain and frequency-domain approaches.

**E0531 Communication Systems (3/0):** In the design of a communication system, the system designer works with mathematical models that statistically characterize the signal distortion encountered by physical channels. In this course, we first introduce the fundamental ideas of analog signal and system in time domain, and then through Fourier series and transforms we study signals in the frequency domain. With this principle, we are able to get more insight to the characteristics of channels and learn how various modulation technologies work for a particular channel.
E0632 Introduction to Microprocessors (0/3): This course offers a study of software and hardware architectures of the ARM processors, including memory systems, interrupts and exceptions, fault handling, memory-mapped peripherals, and floating-point data processing. Prerequisite: ARM Assembly Language Programming.

E0650 Data Structures (3/0): This course offers a study of data structures, including stacks, recursion, queues, lists, trees, sorting, searching, and graphs. Prerequisite: Introduction to Computers and C Language Programming.

E0692 Electrical Engineering Experiment (1/0): This course introduces LEGO MINDSTORMS NXT hardware and software so that students can learn various aspects of a robot. By using LEGO block, motor, and sensors, students will be able to understand kinematics, mechanical design, programming, sensor applications, and motor control.

E0710 Computer Aided Design (0/3): Use of CAD software to analyze and simulate electric circuits.

E0721 Electric Circuit Experiment (1/1): This course covers digital and analog circuit theory and allows students to use software tools and hardware instruments to measure circuits.

E0722 Circuit Theory (3/2): Electric circuit analysis and solutions to circuits in time, phasor, and frequency domain in conjunction with computer-aided analysis.

E0738 Practical Electronics (0/3): This course includes design of systems and circuits of wireline and wireless transmission systems. Students can better find related research and jobs after taking this course.

E0760 Digital Systems Design (2/0): Following from previous courses on logic design, this course introduces principles and hardware, digital computer designs and microprocessor-based logic systems.

E0762 Digital Signal Processing (0/3): Digital signal processing and digital filter design, including the discrete-time filters and discrete signal processing.

E0766 Digital Communication System (0/3): This course (1) how communication systems work, (2) the effect of noise, and (3) wire and wireless communication system.

E0767 Numerical Analysis (0/3): The current course introduces applications of numerical methods for engineers and scientists. Using the program Matlab, the learner can understand how to solve problems of engineering applications for computers.

E0836 Introduction to VLSI (3/0): The current course introduces design principles and methodologies of Very Large Scale Integrated Circuits (VLSI).

E0902 Logic Design (0/2): Introduction to number systems and conversion, Boolean algebra, algebraic simplification, applications of Boolean algebra, Karnaugh maps, Quine-McCluskey method, multi-level gate networks NAND and NOR gates, and multiple-output networks.

E0933 Assembly Language programming (2/0): This course covers the introduction of the Assembly Language for ARM processors. It can help students get familiar with the syntax and operations of the assembly language (the low-level language), gain the ability to write the assembly language programs for various purposes, and meanwhile attain a background study of the organization and architectures of ARM processor systems so as to lay a foundation for future utilization of various processor systems.

E0961 Electronics (3/3): Electronics is devoted to the study of electronic devices and basic circuits. It starts with a concise introduction to semiconductors and PN junction. Then the bipolar junction transistor (BJT) and the MOS transistors are introduced. Electronics II starts with the study of digital electronics. Both MOS digital circuit and bipolar digital are covered. We then go on to study the differential amplifier, in both bipolar and MOSFET forms. Electronics III deals with more advanced topics in amplifier design.

A2273 Computer Programming (2/2): This course offers an introduction to computer science. We start from the binary system. The main hardware components of computer systems such as CPU,
Memory, and I/O devices are described. Next, the software system and the programming language VB and C/C++ are introduced. In the programming languages, we focus on the modern programming methods: structured, modularized, object oriented and visualized. Techniques such as conditional statement, loop statement, and structure/classes are illustrated in this course.

**E1060** **Computer-Aided Simulation** (3/0): Using CAD software to analyze and simulate electric circuits.

**E1111** **Algorithms** (2/0): Based on the courses of basic concepts of computers and data structures, students learn the advanced and more efficient principle of programming to solve more complex problems.

**E1121** **Probability** (0/3): The purpose of this course is to introduce the fundamental theory of probability. It can be used to model random signals in the related areas of electrical engineering, and characterize their behavior as they traverse through deterministic systems disturbed by background noise and interference signals.

**E1200** **Fuzzy Theory** (0/3): This course introduces the theory and relative applications of fuzzy systems. The main topics include fuzzy set, fuzzy relation, fuzzy logic, fuzzy inference, and fuzzy system, and fuzzy control.

**E1285** **Signals and Systems** (0/3): The objective of this course is to present the technologies of analyzing linear systems. Primary emphasis is placed on Fourier transform, Laplace transform and Z-transform.

**E1400** **Industrial Control Systems and Technologies** (0/3): This course is an introduction to industrial control system technology, including the concepts, principles, procedures, and computations used by engineers and technicians to select, analyze, specify, design and maintain all parts of a control system. Emphasis is on the application of established industrial control systems.

**E1503** **Theory and Applications of Sensors** (3/0): This course includes basic sensor theory, such as signal transformation and also introduces the various basic and advanced sensors with their application and design methodology.

**E1562** **Basic Electric Experiments** (1/1): Students will learn to operate APP Inventor to design basic Android APP. Students will learn how to operate Android SDK and basic APK design and compiler.

**E1563** **I/O Interface Experiments** (1/0): This course will introduce design of 8051 and explains the embedded system development process action plan. At first, we will introduce the key techniques of 8051, then we will introduce how to use a device programmer. We will also use the code generation tool and simulator. We will use explanation, discussion, actual operation, and thinking models of the leadership to strengthen students’ logic analysis and creative ability.

**E1565** **Microprocessor Experiments** (0/1): This course will introduce design and explain the embedded system development process action plan. At first, we will introduce the key techniques of FPGA and VHDL, then we will introduce how to use device programmer for downloading the final codes into memory. We will also use code generation tool, simulator, and IDE, hardware testing tools. We will use explanation, discussion, actual operation, and thinking models of the leadership to strengthen students’ logic analysis and creative ability.

**E1568** **Electronic Experiments** (1/0): This course will teach the students to be familiar with the syntax of the Verilog HDL. It will further teach the students to understand the design methods and procedures of the IC cell-based design.

**E1868** **Wireless Communication Networks** (0/3): This course introduces the concepts of the wireless communication networks, the basic operations of network transmission, and other related issues as well as their current solutions. After this course, students will attain a strong professional background for possible future study in this field.

**E2022** **Control of Electrical Machines** (0/3): This course introduces the fundamental theorem and
analysis methodology for digital control systems. Students may learn the basic capability to apply the
digital control technology to engineering applications.

E2067 Control System Design (0/2): Modelling, design, numerical simulation verification, and
controller design methods, examples.

E2135 Introduction to Mobile Communication System (2/0): This course will introduce the
fundamentals of wireless and mobile systems. The topics cover cellular system infrastructure, mobile
radio propagation, channel coding and allocation, existing wireless systems, and so on. Students will
have a basic knowledge of mobile systems.

E2162 Introduction to Computer Networks (0/2): This course will introduce the basic knowledge of
a computer network, including the OSI model, TCP/IP, ARP/ RARP/ICMP protocols, routing, and
other related topics. Through this course, students will have a basic understanding of the network and
have related skills.

E2237 Machine Vision (3/0): The course introduces the basic methods of machine vision and its
applications. The topics include the application of Visual Studio development tool, the Visual C++
language programming, and the basic machine vision methods.

E2330 Power Electronics (3/0): This objective of course is power electronics. Course content is
designed to enable students to understand the application architecture and IC design of the power
supply, as well as a dedicated power supply control and AC motor drivers. The course allows students
to understand:
(1) The basic theory of electric power.
(2) The principles how that each kind of electric power works.
(3) The principles how that each kind of electric power DC-to-DC converters works and computational
methods.
(4) The basic theory how that AC motor drivers work.

E2357 Hardware Description Language (0/3): Introduction of HDL and High-Level IC design and
verification methods.

E2344 Embedded Systems (0/3): In this course, we introduce the structure of embedded systems and
programming. To improve their programming ability, students need to finish their program project each
week.

E2556 Computer Firmware Design Lab (0/1): The current course uses C programming language to
implement various algorithms. Then the C source code is used with related knowledge.

E2643 Introduction of Wireless Network System (3/0): With the rapid development of wireless
network technologies, people can access the network via using various techniques. Therefore, this
course will introduce the various wireless communication techniques including wireless local area
network, Bluetooth, wireless sensor network, wireless ad hoc network, and so on.

E2670 FPGA System and SOPC Design (3/0): This course introduces hardware and software
designing. It explains the embedded system development process action plan. Key techniques of FPGA
and SOPC are first introduced. Then we will introduce how to use the device programmer for
downloading the finalized codes into memory, use code generation tools, simulator, and IDE. Use of
Hardware testing tools is also studied.

E2705 Introduction to Robotics (2/0): The main purpose of this course is to let the students learn the
architecture, theory, application and future development of various robots.

E2719 Introduction to System Engineering (3/0): Systems Engineering is an interdisciplinary
approach to enable the realization of successful systems. It focuses on defining customer needs and
required functionality early in the development cycle, documenting requirements, then proceeding with
design synthesis and system validation while considering the complete problem. In this course, three
parts are presented. The first part introduces the basic concepts that govern the systems engineering
process. The second part introduces the systems engineering problem-solving process, and discusses in
basic terms some traditional techniques used in the process. Part three discusses analysis and control tools that provide balance to the process. Key activities (such as risk management, configuration management, and trade studies) that support and run parallel to the system engineering process are identified and explained.

**E2835 Introduction to Pattern Recognition (3/0):** To present various pattern recognition tasks in a unified way, including image analysis, speech processing, and communication applications.

**E2964 Introduction to Digital Communication and Networks (0/2):** This course teaches students to learn Theory of Communication, Signal Coding and TCP/IP Protocol.

**E2965 Applied Specific Integrated Circuit Design (0/3):** The current course introduces design principles and methodologies of the Application-Specific Integrated Circuits (ASIC).

**E2995 Installation & Implementation of Wireless Sensor Network (0/2):** Wireless sensor network is composed of many wireless devices (Zigbee) formed, and each unit has all the information collected from the environment, and the ability to communicate with each other.

**E3073 Fiber-Optic Transmission Practices (0/2):** This course presents the fundamentals of several subjects on which fiber-optic technology is based. These include fibers, optics, communications, fiber optic communications, and, finally, fiber optic test and measurement. In addition, there is a hands-on section: instrument operation.

**E3090 Graphical Programming Design (2/0):** This course introduces the basic concept of LabVIEW for LEGO MINDSTORMS NXT. Students learn how to create a robot built by LEGO MINDSTORMS NXT components. The basic C++ program language will be taught and used in the NXT. Students also learn about mechanical design, program design, motor control, and sensor detection.

**E3091 Robotic Experiments (0/1):** This course introduces hardware and software design. Action plans for embedded systems development are explained. The key techniques of FPGA and SOPC are first introduced, and then the device programmer for downloading the final codes into memory is examined. A code generation tool, simulator, and IDE are introduced, and hardware testing tools will also be studied. Finally, a Verilog hardware circuit to receive sensor signals and control motor will be explained.

**E3121 Introduction to Electrical Engineering (2/0):** This course provides an introduction to the key areas of electrical engineering; helping freshmen recognize the discipline of electrical engineering; and its origins from the application of electric energy and/or the related messages/information carried. Generally, these applications involve the research and application of electricity, electronics and electromagnetism. The course will cover initial knowledge, summarized principles and formulas within these areas, as well as the tools and resources needed to perform analysis and design.

**E3122 FPGA Development Platform Introduction (0/3):** This course will introduce digital circuit design for the FPGA chip and the operating method of the synthesis tool. The course introduces the FPGA chip and explains how to operate the Quartus II software. After this, the syntax of Verilog HDL will be discussed. The course uses discussion, actual operation, and leadership to strengthen students' logic analysis and creative ability.

**E3128 RF Circuit Design (0/2):** In contrast to basic analysis and design of low-frequency electronic circuits, this course is concentrates on high frequency/RF electronic circuits. In particular, analysis of RF circuits is rooted in the concept of voltage wave propagation. This course together with Circuitry provides comprehensive electronic circuit design principles.

**E3228 Protocols for Mobile Communications (0/2):** In this course students learn various basic principles and correlation techniques of action communication network, such as WiFi, WCDMA, IEEE 802.16, LTE, LTE-A, etc.

**E3396 Graphical Programming Laboratory (1/0):** The goal of this course is to present the basic concept of LabView, and allow students to become familiar with LabView in solving problems associated with electrical engineering applications.
E3400 Communication System Laboratory (3/0): This course teaches students how to use MATLAB/SIMULINK and software-defined-radio development board to realize various digital communication systems.

E3411 Integration of Intelligent Mobile Devices and Robot Control Systems (0/3): This course teaches Robotics and related control theory using Java programming language in Eclipse IDE. Content includes Mobile app design, UI design, actuator, sensor, numeric manipulation and combination with hand-held device to advanced robot behavior control.

E3412 Global Robot Industry and Technology Trend Analysis and Practicum (0/3): Students learn industry analysis theory, case analysis, and group discussion on global robotic industry status quo. A professional industry analysis report will be completed by each group as a final term project.

E3413 FPGA-Development Platform Laboratory (0/1): This course introduces digital circuit design and the operating of the synthesis tool for FPGA chip. FPGA chip, Quartus II software and Verilog HDL will be discussed. The goal is to increase student’s logic analysis ability and creativity through hands-on practice.

E3516 Fundamental Communication Laboratory (0/1): This course will teach students how to use MATLAB/SIMULINK and software-defined-radio development board to realize various analog and digital communication systems.

E3535 Engineering Project Management (0/3): This course provides students with a basic exposure to the tasks and challenges facing today’s projects and in particular, those of the project manager. Students are required to manage globally distributed teams while adhering to scope, budget, time constraints, all while balancing project risks and rigorous quality demands. The course provides students with the tools and all important behavioral skills to systematically manage projects for profit and non-profit organizations.

E3579 Advanced Communication Laboratory (1/0): This course is a lab-oriented introductory course on optical fiber communication, wireless communication, and wireless control for fourth-year undergraduate students. This course comprises three parts: 1. Basic theory of optical fiber communication, and Ethernet over plastic optical fiber. 2. Applications in wireless communication: some wireless communication and wireless control projects. 3. Microwave components: understand basic theory of passive microwave components and learn how to measure these components using vector network analyzer.

E3683 Creative Thinking (0/2): This course will help students generate new ideas and bring them to life as a product or service. This approach to problem solving can be applied to any real world challenge.

E3744 Industry Internet of Things (IOT) (0/2): This course will plan the introduction and development of the Industrial Internet of the Things (IIoT). IIoT will introduce its perception layer, network layer and application layer, in order to understand the application of IIoT.

S0058 Semiconductor Physics (3/0): Solid state is the foundation of modern material science and semiconductor electronics. The course is designed to familiarize students with fundamental principles of solids such as crystal structure, thermal properties, band theory, electronic properties, optical properties, etc.

S0290 General Physics (0/2): This course introduces the basic concepts of natural forces and the laws of motion. By understanding these basic laws, students will be able to analyze and solve practical physical problems.

S0337 Electromagnetic Waves (3/0): This course discusses Maxwell’s equations, propagation of electromagnetic waves, transmission line equations, characteristics of transmission lines, reflection and transmission coefficients, standing wave ratios, Smith charts, impedance matching, microstrip line and digital transmission lines, rectangular waveguides, TE and TM modes, circular waveguides, resonators, optical and dielectric waveguides, parameters and characteristics of antennas, dipole and slot antennas,
broad band and array antennas.

**S0338 Electromagnetics (0/3):** This course concerns vector analysis, Coulomb's law, Gauss’ law, static fields in conditions and dielectrics, polarization, boundary conditions, capacitance calculation, static electric energy and force, Poisson and Laplace’s equations, methods of images, boundary value problems, steady current and Ohm's law, resistivity calculation, Biot-Savart’s law, Ampere’s circuits, magnetic dipoles, magnetization, magnetic circuits, boundary conditions inductance calculation, static magnetic energy and force.

**S0338 Electromagnetics II (3/0):** This course discusses Faraday’s law, electromagnetic induction, Maxwell’s equations, electric and magnetic potentials in time-varying fields, boundary conditions, wave equation and its solution, propagation of uniform plane waves in different media, time-harmonic fields, Doppler effect, propagation of electromagnetic energy, Poynting’s theorem, normal and oblique incidences on different interfaces, parallel and perpendicular polarizations.

**S0439 Linear Algebra (3/0):** This course looks at the fundamentals of linear algebra, such as systems of linear equations and matrices, determinants, vector space, inner product spaces, eigenvalues, eigenvectors, and linear transformations.

**S0487 Discrete Mathematics (2/0):** This course introduces discrete mathematics and its application typically used by the electrical engineer. The content of this course includes logic and proofs, discrete structure, algorithms, etc.

**T0141 Special Topics Lab. (1/0):** This course familiarizes students with basic networking operations and the practice of SDN (Software-Defined Networking), and completes the further study/research on related topics of SDN.

**Master’s Program in Electrical Engineering**

**E0786 Coding Theory (0/3):** The objective of this course is to teach students the basic principles of error correcting codes. It also covers how to encode and decode various error correcting codes.

**E1011 Digital Speech Processing (3/0):** Topics covered by this course include: (1) Discrete-time (DT) signals and systems, (2) Sampling theorem and sampling rate conversion, (3) Z transform, (4) DTFT, DFS, DFT and FFT, (5) DT LTI systems: difference equations, frequency responses, signal flow graphs, and some important properties, and (6) Digital filter design fundamentals.

**E1075 Advanced Operating Systems (3/0):** This course introduces the kernel architecture of current operating system, including process management and scheduling, memory management, file systems, interprocess communication, I/O subsystems and so on. Students learn how an operating system works and is designed by tracing the kernel code.

**E1389 Intelligent Control (0/3):** This course is an introduction to new aspects of self-learning control structures. Neural networks in conjunction with fuzzy decision logic are presented as key enabling technologies to achieve a higher control performance.

**E1390 Analog Integrated Circuits Design (3/0):** The basic principles, design, and analysis of analog integrated circuits is taught in this course. Students have the ability to design and analyze analog integrated circuits after learning this course and can then explore related research and employment.

**E1391 Electromagnetic Theory (3/0):** Topics covered by this course include: Generalized Maxwell’s Equation, EM boundary value problem, Green’s function, eigenfunction expansion technique, Conservation of EM energy, EM radiation from simple sources, general EM field, Hertzian potentials, Dyadic Green functions.

**E1490 Technical Writing (2/0):** This course helps students understand the differences between technical writing and normal daily writing with an emphasis on how to find, read, summarize and write technical documents in a professional manner.

**E1651 Advanced High-Speed Networking (0/3):** This course trains the students to be familiar with
the techniques of the wireless data networks. It further empowers students to understand both the design methods and protocols of the WLAN.

E1849 Adaptive Signal Processing (0/3): This course introduces some practical aspects of signal processing and in particular adaptive systems. Current applications for adaptive systems are in the fields of communications, radar, sonar, seismology, navigation systems and biomedical engineering. This course presents the basic principles of adaptation and covers various adaptive signal processing algorithms (e.g., the LMS algorithm) and many applications, such as adaptive noise cancellation, interference cancelling, system identification, etc.

E1957 Antenna Engineering (3/0): The objective of this course is to enable students to understand the mechanism of radiation, and the basic principles, parameters, and terms of antennas. After completing the course, the students should be able to use them to appreciate the utility of different types of antennas.

E2134 Signal Modulation Systems and Detection (0/3): This is a first level graduate course in digital communications. The course covers digital modulation techniques, including estimation and detection theories. Studies include BPSK, FSK, NFSK, QPSK, OQPSK, MSK, DPSK signaling schemes in AWGN environment, performance and power.

E2245 Digital Control System (0/3): This course introduces how to apply the conventional analog control methodologies to the analysis and design of computer digital control systems theoretical backgrounds, including analog control systems, Z transform, difference equations, and Z-plane analysis, are introduced in this course. Software tools will be used to simulate some topics including digital PID, digital self-tuning, and digital sliding mode control systems to evaluate the effectiveness of the digital controller.

E2324 Controller Design (3/0): This course considers such topics as Perturbed system models: Delta-P-K framework, Norms for signals and systems; Robust Controller Design Framework; Why H-infinity and/or H2 Control, LMI Lab Tutorial, H-infinity/H2/SPR/pole placement controller design, finite-frequency controller design.

E2359 Application of Robust Control (0/3): This course considers Perturbed system models; Norms for signals and systems; Robust Controller Designs; controller design on restricted frequency ranges; Matlab LMI LabTutorial.

E2365 Personal and Wireless Communication Systems (0/3): The goal of this course is to introduce cellular concepts, propagation, path loss and system structures.

E2389 Mobile Computing (0/3): This course introduces related issues of mobile computing. The main purpose will be getting students to learn about these issues and current possible solutions (establishing a strong professional background for further study).

E2454 Advanced Digital Signal Processing (3/0): This course will review important DTFT and DSP concepts as well as to provide an in-depth treatment of various techniques for designing digital filters, such as the IIR filters from analog filters, optimal linear phase FIR filter and multi-rate filter bank system.

E2590 VLSI Testing and Design for Testability (0/3): The goal of this course is to present a comprehensive guide to new DFT techniques, showing students how to design a testable and quality product, drive down test costs, improve product quality and yield, and speed up time-to-market and test-to-volume.

E2695 Special Topics on Electromagnetics (3/0): This course covers several aspects related to microwave techniques for the investigation of materials and structures in different applications ranging from civil and geophysical engineering to industrial non-destructive evaluation and testing, diagnostics in electronics, and buried object detection. Theoretical and experimental issues are addressed and great consideration is devoted to inversion procedures, both deterministic and stochastic ones.

E2740 Mobile Broadband Network (3/0): The goal of this course is to introduce mobile, broadband
and satellite communication systems.

**E2803 Stochastic Processes (3/0):** The goal of this course is to build a theoretical framework of modern communication, control and signal processing systems. Basic ideas of probability spaces, random variables, random processes, convergence of random sequences, important limiting theorems will be introduced. Selected applications such as optimal filtering, queuing chains, spectral estimation will also be discussed.

**E2807 Introduction to High Technology Patents (0/1):** In this course, students learn the meaning and use of patents, patent applications, and statutory limits. Understanding is accomplished through simulation and practical writing, thus helping students better understand the importance of patents obtained and how to protect the key technologies and creativity in the future.

**E3143 Principles and Applications of Optical Fiber Sensing (3/0):** This course shows how optical fibers are used as sensors. Optical fiber sensors work in variety of ways, sometimes using them to deliver light, other times monitoring changes induced light transmission caused by external effects. Optical fiber sensors can measure pressure or temperature, serve as gyroscopes to measure direction and rotation, sense acoustic waves at the bottom of the sea, and do many other tasks.

**E3197 Digital Controller Design (3/0):** This course is concerned with Multi-objective control, Finite frequency filtering/control.

**E3198 Multivariable Control and its Applications (0/3):** This course is concerned with H-infinity controller synthesis in restricted frequency ranges, an alternative approach for H2 loop shaping, controller synthesis for positive systems.

**E3315 Digital Watermarking Technology (3/0):** Digital imaging can be easily and widely distributed by unlawful copying. Digital watermarking technology is the insertion of a message into a cover media, and can be an excellent solution to protect against pirating. This course introduces spatial-domain watermarking methods; frequency-domain methods; robust watermarking methods; fragile watermarking methods; watermarking methods based on vector quantization; reversible digital image hiding; and image authentication and recovery.

**E3402 The Design of Human Computer Interface (3/0):** The current course first introduces the basic concept of human computer interface and the related techniques, including image processing, Kinect, pattern recognition techniques. The course also teaches how to design HCI projects by using Kinect, 3D printers, laser cutting machine.

**E3457 Internet of Things and its Applications (0/3):** The main goal of this course is to introduce the basic concepts and technologies of the Internet of Things (IoT). Techniques of IoT in sensor layer, network layer, application layer, etc. are included in this course. Students have a comprehensive understanding of IoT through discussion, readings, and hands-on project.

**E3472 Design and Practice of Intelligent Control (0/3):** The course aims to teach the basic theory of the intelligent control systems including fuzzy system and neural network. The course will apply the intelligent control systems to control intelligent robots, and a comparison among several intelligent control systems will be made. Meanwhile, some reports will discuss the practical applications of intelligent controllers and I hope that students can understand the effectiveness of the intelligent control systems.

**E3474 Introduction to the Design and Application of Intelligent Electronics (3/0):** This course introduces embedded systems based on different robotic platforms. The students will use FPGA to receive sensor data, control motor, and implement a project. The final project is an automatic robot.

**E3480 Image Processing and Pattern Recognition (3/0):** The goal of this course is to introduce the principles and applications of digital image processing, including pattern recognition. The students also learn the methods and techniques of digital image processing. The application software used in class is the MATLAB language.

**E3489 System Design of 5G Mobile Communication System (3/0):** This course introduces the
Fourth-Generation Mobile Communication SPEC and relative information, and discusses the Fifth-Generation Mobile Communication's possible future designs.

**E3490 Optimization Techniques in the Design of 5th Generation Mobile Networks (0/3):** This course introduces the Fourth-Generation Mobile Communication SPEC and relative information, and introduces optimization techniques involved with Fifth-Generation Mobile Communication’s possible future.

**E3494 Antenna Principles and Engineering Applications (3/0):** This course helps students to become familiar with the antenna radiation mechanism, the formulas and the basic characteristics; and to learn the working principles of conventional linear antennas and the antenna arrays, the structure of the planar antennas, and the slot antennas. In addition to design techniques of the dual-band, multi-band and wideband antennas will be presented. Finally, there are various cases involving the engineering application of different antennas.

**E3535 Engineering Project Management (0/3):** This course provides students with a basic exposure to the tasks and challenges facing today’s projects and in particular, those of the project manager. Students are asked to imagine managing globally distributed teams while adhering to scope, budget, time constraints while balancing project risks and rigorous quality demands. This course will provide students with the tools and behavioral skills to systematically manage projects for profit and non-profit organizations.

**E3616 Electronic Design Automation (3/0):** This course discusses how to apply efficient algorithms to aid and mitigate circuit design efforts such as placement and routing (P&R). Moreover, for decreasing back-end cost, some dfx (Design for X) front-end techniques will be also involved in this course.

**E3617 Multi-processor and Multi-core Designs for Reliable Embedded Systems (1/0):** This module considers the challenges involved in creating distributed (multi-processor) designs and the related challenges involved with multicore designs. The module also covers key issues such as: schedulers, assigning tasks to processors, using multiple processor cores to enhance fault tolerance.

**E3618 Mobile Programing and Mobile Learning Design (3/0):** In this course, we introduce the development platforms of Window Mobile, iPhone and Android. In addition, mobile-phone programming and related research are also studied in this course.

**E3619 Model-based Communication IC Design (0/3):** Seamless realization from conceptual wireless communication algorithm to practical integrated circuit (IC) implementation are important subjects. Matlab/Simulink recently incorporates HDL-coder to ease and expedite the design flow for module-based communication IC design. In this course, students will learn how to construct communication systems in simulink and convert them into RTL codes via HDL-coder automatically. The generated RTL codes will be prototyping in Zedboard FPGA hardware for state-of-the-art architecture explorations.

**T1196 Scholastic Paper Study (0/1):** This course will invite professional scholars in the related areas of electrical engineering to give a speech for the graduate students that focus on an advanced research or industrial topic. It also provides the graduate students, who are going to defend their thesis, a presentation platform and further promotes research exchange and full discussion with each other.

**E3668 Principles and Applications of Sonar Systems (0/3):** Sound/acoustic waves suffer less attenuation than electromagnetic waves in water, and thus become an effective means in underwater communication. Such waves are necessary for long-range propagation. Devices that use sound for navigation and ranging are referred to as sonar. This course introduces the principles and applications of a sonar operation, and analyzes sonar parameters in the sonar equation. A side scan is used to show sonar design, operation, and images. The course serves as a cornerstone for underwater system analysis, which may be applied to sonar design in submarines or surface ships.

**E2605 Modeling and Simulation (0/3):** This course introduces the basic concepts of computer simulation and queueing models.
E3684 Elements of Electric Vehicle Practical Design (1/0): This course addresses key elements of electric vehicle design. Topics covered include vehicle road load calculations, energy forms and energy flows, electric machines overview, motor drive control for traction and regenerative braking, power electronics, on-board energy storage (batteries, supercapacitors, etc.), battery power and capacity/energy, battery system design (cell, module and pack), Battery Management System (BMS), cell monitoring and balancing, thermal management, battery charging schemes and systems, and future trends of ground vehicles.

E3790 Image Processing and Recognition (0/3): This course will cover the principles and algorithms of digital image processing and pattern recognition. We will also apply the taught theory to face detection and recognition, image tracking, and image alignment and stitching problems.

E3797 Invited Lectures on Electrical and Computer Engineering (2/0): This course will invite professional scholars in the related areas of electrical engineer to give a speech for the graduate students that focuses on an advanced research or industrial topic. It also provides graduate students who are going to defend their thesis a platform and gives a chance to prompt the research experience exchange and fully discuss with each other.

E3808 Principles and Applications of Optical Fiber Sensing (3/0): This course shows how optical fibers are used as sensors. Optical fiber sensors work in a variety of ways, sometimes just using optical fibers to deliver light, other times monitoring changes induced in light transmission caused by external effects. Optical fiber sensors can measure pressure or temperature, serve as gyroscopes to measure direction and rotation, sense acoustic waves at the bottom of the sea, and do many other tasks.

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Master’s Program in Robotics Engineering

E1490 Technical Writing (2/0): This course helps students understand the differences between technical writing and normal daily writing with emphasis on how to find, read, summarize and write technical documents in a professional manner.

E1590 Optimization Theory (0/3): This course introduces basic optimization theory and its applications. The theory includes Linear and Non-linear Algebra, Network Optimal, Genetic Algorithm, and Particle Swarm Optimization.

E2401 Engineering Optimization (3/0): The course introduces the fundamental theorems of optimal design methods. Students will learn the basic capability of engineering optimization.

E2676 Principles and Applications of Optical Fibers (3/0): This course is divided into three parts. Part 1 attempts to put optical fiber into perspective as a transmission medium. Part 2 describes in detail fibers, cables, detectors, connectors and splices, and passive devices. Part 3 attempts to show how fiber-optics systems are put together.

E2701 Opto-Electronics (3/0): This course introduces the fundamentals of several subjects, including fiber-optic components, modulation of light, display devices, light sources, photodetectors, optical waveguides, optical communication systems, and, finally, fiber-optic test and measurement. In addition, there is a hands-on section: instrument operation.

E2807 Introduction to High Technology Patents (0/1): In this course students learn about patents, patent applications, and statutory limits. Through simulations and practical writing, students understand the importance of patents obtained and how to protect the key technologies and creativity in the future.

E2819 Optical Networks (0/3): This course introduces the technology underlying optical networks and the transmission system engineering, and focuses on the physical layer design of the latest generation of transmission systems and networks.

E2865 Digital IC Design (3/0): This current course introduces design principles and methodologies of the Digital Integrated Circuit.
E2883 Design of Control Integrated Circuits for Optical Communications (0/3): This course introduces five types of broadband circuits for optical communications: transimpedance amplifiers, limiting amplifiers, automatic gain control amplifiers, laser drivers, and modulator drivers. Additionally, some background information about optical fiber, photodetectors, lasers, and modulators is provided to elucidate the system environment in which these circuits operate.

E2886 Robotics (0/3): This course discusses the theories and design concepts of robotics. The course includes lectures, simulations, and implementations. The concepts and the theories are taught via lectures. The course explores the topics such as kinematics, circuit design, motor control, and navigation. In order to reinforce the learning efficiency, implementation of a robotic project is required.

E2895 System Integrated Circuit Design (3/0): SoC is concerned with power dissipation and performance of modern chips. Key techniques of SoC design are first introduced. Then we will introduce how to design the low power high speed modern SoC chips.

E3023 Image Process and Hardware Accelerator Design (3/0): In this course, the architecture of the DE2 platform is described first. The specs of LCD touch panel and CMOS sensor are introduced and explained using the Verilog codes. The proper application of FPGA to accelerate image processing is then discussed.

E3025 Embedded Hardware Accelerator Design (0/3): The current course introduces digital circuits with FPGA chip and uses a DE2 multimedia board as an embedded platform. In the first half of the semester, the DE2 platform and the principles of CMOS digital cameras and controller design are introduced. After this, the hardware and software co-design methods for hardware accelerator of imaging recognition is discussed in the other half of the semester.

E3472 Design and Practice of Intelligent Control (0/3): This course involves the basic theory of intelligent control systems including fuzzy systems and neural networks. The course applies intelligent control systems to control intelligent robots, with a comparison among several intelligent control systems being made. In addition, the course considers the practical applications of intelligent controllers and emphasizes the effectiveness of intelligent control systems.

E3474 Introduction to the Design and Application of Intelligent Electronics (3/0): The current course first introduces the basic concept of intelligent electronics and the related techniques, including IOT, Unity, 3D printing, Arduino, and laser cutting.

E3476 Mechanism Design and Manufacturing Workshop (3/0): This course introduces various mechanical mechanisms, and their comparisons, numerous methods for generating mechanisms, mechanical drawing of spatial mechanisms, as well as machining of mechanical elements.

E3477 Design of Servomotor Control (3/0): The main purpose of this course is to let students better understand motor drivers including stepping motor, DC motor and AC motor, as well as the design of a controllers for motor drivers.

E3478 Application Practice of Robot Manipulators (3/0): This course uses the world-renowned company KUKA robot manipulator as training materials. The course introduces the knowledge and practical aspects of robot applications. The course is divided into three parts, including (1) methods of the robot manipulator and calibration methods, (2) the writing of robot manipulator programs, (3) the dismantling of robot manipulators as exercises. Course objectives are to enable students gain practical experience and obtain a genuine license for the KUKA robot manipulator.

E3479 Application and Practice of Microcontroller (0/3): A microcontroller is used in actual applications that require small size and low-power consumption. This course introduces the TM4C123GXL board for different robotic platforms such as omni-directional mobile, multi-link robot manipulator, self-balancing robot. The course seeks to help students design a real robotic platform.

E3492 Seminars on Applied Intelligent Robotic Systems (0/3): Collaborating professors from the Departments of Electrical Engineering, Information and Library Science, and Information and Communication, along with corporate lecturers provide students with robotics HW/SW, information services, and artistic design knowledge to complete a term project.
E3498 Visual Sensing Technology and its Practical Applications (3/0): The course introduces the fundamental visual tracking algorithms and their programming methods with OpenCV and MFC libraries. Students acquire the capability to study closely visual tracking.

E3499 Robotic Project Experience (0/3): This course introduces the hardware and software design of robots. Students can learn various aspects of robots. By taking part in robot design, student will be able to understand kinematics, mechanical design, programming, sensor applications, and motor control.

E3519 Micro-sensors and Sensing Circuits Design (0/3): This course describes principles of micro-sensors, especially CMOS-MEMS micro-sensors. Additionally, design methodologies of sensing circuits are included. Students can understand the basic concepts of micro-sensors and sensing circuits after taking this course.

E3535 Engineering Project Management (3/0): This course allows students to understand how to use project management to improve work efficiency. In addition, it improves students’ leadership, communication and coordination skills.

E3797 Invited Lectures on Electrical and Computer Engineering (2/0): This course will invite professional scholars in the related areas of electrical engineering to give a speech for the graduate students that focuses on an advanced research or industrial topic. It also provides graduate students who are going to defense their thesis a platform and provides a chance to prompt the research experience exchange and full discussion with each other.

T1196 Scholastic Paper Study (0/1): This course will invite second year graduate students and professional scholars of electrical engineering to give a lecture or speech. They will introduce and direct a popular topic, and students will discuss the topic in class.

T8000 Thesis (0)

E3142 Pattern Recognition and Image Processing (0/3): The current course first introduces the basic concept of digital image and its preprocessing methods. Then, we introduce some famous pattern recognition techniques. Finally, three applications about OCR, iris recognition and gesture recognition are studied.

E3457 Technologies and Applications of Internet of Things (0/3): The main goal of this course is to introduce the basic concepts and technologies in Internet of Things (IoT). Techniques of IoT in sensor layer, network layer, application layer, and so on will be included in this course. Students will have a comprehensive understanding of applications in IoT through the discussion and paper reading.

E3475 Estimation Theory and Its Practical Applications (0/3): This course introduces the fundamental theories of system parameter and system state estimation methods. Students will learn the basic capability to study the topic of system identification and state estimation.

E3497 Design Practice of Robot Manipulator (0/3): The course will design a robot manipulator. The course will introduce the knowledge of robot manipulator; the course is divided into four parts: The design of (1) the robot manipulator kinematics and inverse kinematics, (2) SCARA robot design, (3) 6-axis robot manipulator design, (4) 7-axis robot manipulator design. The Course Objectives are to enable students to gain practical experience and design experience.

E3758 RF System and Circuits Design (0/3): The contents of this course includes system design of wireless transceivers and the design of RF and wireless integrated circuits. Students will have essential skills relative to the wireless systems and circuits design after learning this course.

E3499 Special Topics Practice in Robotics (0/3): This course introduces a variety of robot competition held in Taiwan and the world, and enables students to understand how to design and implement the robot for the competition. Through the introduction of building an actual robot platform environment or designing a robot to enhance the ability of students to design an intelligent robot.
Ph.D. Program

E0795 Linear Systems (3/0): In this course, students learn how to model, analyze, and design controller/observer for linear systems. In addition, students will learn how to use numerical simulation software, e.g., Matlab's Simulink Toolbox to carry out numerical analysis.

E1093 Neural Network (0/3): This course introduces the application of neural networks using Neural Network Toolbox 4.0 in MATLAB 6.1. The configuration of neural network includes single-layer, multilayer, radial basis function, self-organized and recurrent neural networks. Various learning algorithms, e.g., back-propagation, 1st order gradient descent, 2nd order gradient descent, are also introduced.

E1185 VLSI Design (0/3): The current course introduces design principles and methodologies of the Very Large Scale Integrated Circuits (VLSI).

E1851 Paper Writing Technique (0/3): This course discusses the technique of writing research papers. Once the target skill areas and means of implementation are defined, the teacher will proceed to focus on what topics can be employed to ensure student participation. By pragmatically combining these objectives, the teacher can expect both enthusiasm and effective learning.

E2381 Broadband Computer Networks (3/0): This course will train students to be familiar with the techniques of the mobile data networks. It will further allow students to understand the design methods and protocols of the 3GPP LTE.

E2386 Fuzzy Systems (3/0): The course discusses the basic theory of fuzzy systems and how to design a fuzzy control system. The final report will involve the practical application of fuzzy controllers where students can understand and apply them to relevant research.

E2401 Engineering Optimization (3/0): This course introduces the fundamental theorem of optimum design methods. Students learn the basic methods of engineering optimization.

E2442 Special Topics on Image Processing (3/0): The principal goal of this course is to provide an advanced discussion of the applications of special topics in image processing methods. 3-D modelling and face detection will be introduced.

E2446 Advanced Analog Integrated Circuits Design (0/3): This course describes various analog-to-digital converters. It contains the basic concepts and the circuit architecture of various analog-to-digital converters. The circuit implementation will be discussed, as well.

E2454 Advanced Digital Signal Processing (3/0): The principal goal of this course is to provide a unified introduction to the theory, implementation, and applications of statistical and adaptive signal processing methods. The focus will be upon spectral estimation, signal modeling, adaptive filtering, and array processing. The principal objectives are to introduce basic concepts and methodologies that can provide the foundation for further study, research, and application to new problems.

E2560 Special Topics of Speech Processing (3/0): This course will introduce the production and perception of speech, including acoustics, pronunciation and voice characteristics of the model. The course then considers illustrations of the voice processing technologies, including speech coding, enhancement, synthesis, recognition.

E2882 Ultra-Wideband Communication Systems (0/3): The current course introduces the following: (1) Smart Antenna; (2) Code Division Multiple Access; (3) Orthogonal Frequency Division Multiplexing; (4) Ultra-Wideband; and (5) Multi-Input Multi-Output.

E3023 Image Process and Hardware Accelerator Design (3/0): This course is designed to familiarize students with the multimedia DE2 board, and to present Verilog hardware description language to design digital circuits. The control methods and architectures of CMOS capture module and LTM display module will be introduced. Finally the basic principles of digital image processing will be introduced and explain how to make the hardware circuit to process images.
E3030 Parallel and Distributed Processing (3/0): This course offers a study of parallel and distributed processing and applies such processing to cloud computing systems. The course can help students become familiar with useful topics related to parallel and distributed processing and cloud computing systems so as to lay a foundation for future study and research on related issues.

E3214 Simultaneous Localization and Mapping (0/3): This course introduces the theory and the techniques of robot localization and navigation problems. The course first introduces the problem of robot navigation, then explanation is made of the various positioning methods. Comparisons of various national and international associated research is undertaken. The course uses lectures, class discussion, simulations, verbal reports, and modeling of leadership to strengthen students' expertise and implementation techniques.

E3489 System Design of 5G Mobile Communication System (3/0): This course introduces the Fourth-Generation Mobile Communication SPEC and relative information, and discusses the Fifth-Generation Mobile Communication's possible future.

E3619 Model-based Communication IC Design (3/0): In this course, students learn how to construct communication systems using Simulink modules and convert them into RTL codes via HDL-coder automatically. The HDL-coder was recently integrated in Matlab/Simulink to ease and expedite module-based communication IC design. The generated RTL codes are implemented using the Zedboard based SDR platform for state-of-the-art architecture explorations.

E3737 System Design of 5G-IoT Communication Network (3/0): The course introduces the Fourth-Generation Mobile Communication SPEC and relative information, and introduces the Fifth-Generation Mobile Communication's and IoT future.

E3791 Application of Artificial Intelligence for 5G Mobile Networks (0/3): The course introduces and discusses the Artificial Intelligence, and introduces the Fifth-Generation Mobile Communication's future.

M0423 Machine Learning (2/0): The course introduces the fundamental theorem of machine learning methods. Students may learn the basic capability to study the topic of machine learning.

M0837 Network Security (3/0): This course introduces numerous related issues involving network security. The main purpose of the course is to let students understand these problems and issues and consider current possible solutions (establishing a strong professional background for further study).

T8000 Thesis (0)
DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING

Degrees Offered: B.S., M.S., Ph.D.

Chairman: Chien-Chang Chen (陳建彰)

The Department

Established in 1969, the Department of Computer Science and Information Engineering is one of the first programs of computer science and engineering established in Taiwan. The department has now 28 full-time faculty members and 30 part-time instructors. The undergraduate program covers all aspects of computer science, information engineering, software applications, and computer theory. With the newly developed technologies in computer networks, multimedia computing, and telecommunication, the department offers elective courses in a number of related areas. In 2018, there were about 1001 students in the Department, along with 138 Master’s students and 19 Ph.D. students.

The department offers academic degrees of BS, MS, and PhD in Computer Science and Information Engineering, and an MS degree in Networking and Multimedia. The department faculty and students are involved in a wide range of research areas. Several research labs have been established and receive continued support by TKU as well as government agencies, such as the Ministry of Science and Technology of the Republic of China, which provides various research grants.

Research Areas

- Computer Networks
- Distance Learning Technologies and Standards
- Multimedia Computing
- Software Engineering
- Parallel and Distributed Computing
- Database Systems, Data Mining and Applications
- Artificial Intelligence and Fuzzy Theory
- Computer Graphics and Virtual Reality
- Image Processing, Pattern Recognition and Machine Vision
- Embedded Systems
- Wireless Communication, Mobile Computing, and Sensor Networks
- Information Security and Cryptography
- Bioinformatics
- Web Technology, Electronic Commerce, and others

Internationalization is one of the goals of our department. Starting in 2000, several graduate courses have been conducted in English; while in 2014, a new English master program was instituted. One of the perspectives of our department is to admit international graduate students, with the permission of the Ministry of Education and Tamkang University.

In the past few years, the department faculty have carried out several joint research projects with partners in Hong Kong, Japan, China, Russia, Canada, and other countries. International research is another aspect of the department’s activities. Our faculty members constantly travel overseas to share and exchange professional expertise and experiences with researchers from other countries. In the future, we will continue to build up the department’s reputation in the international community.

Faculty

Professor Emeritus
Louis R.Y. Chao (趙榮耀)

Professors
Hui-Huang Hsu (許輝煌); Rui-Dong Chiang (蔣璿東); Huan-Chao Keh (葛煥昭);
Chin-Hwa Kuo (郭經華); Chih-Yung Chang (張志勇); Ying-Hong Wang (王英宏);
Kuei-Ping Shih (石貴平); Hwei-Jen Lin (林慧珍); Wen-Bing Horng (洪文斌);
Ren-Junn Hwang (黃仁俊); Shwu-Huey Yen (顏淑惠); Chien-Fu Cheng (鄭建富);
The Department of Computer Science and Information Engineering offers programs at the undergraduate and graduate levels.

1. Requirements for a degree of Bachelor of Science in Computer Science & Information Engineering:
   Completion of 128 credits of courses, including 91 credits of required courses (including 26 credits of General Education), 21 credits of elective professional courses, and 16 credits of free elective courses.

2. Requirements for a degree of Master in Computer Science and Information Engineering:
   Completion of 30 credits of courses, including 8 credits of required courses and 4 credits of thesis courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.
   Required courses:

3. Requirements for a degree of Master in Computer Science and Information Engineering (English program):
   Completion of 26 credits of courses, including 5 credits of required courses and 4 credits of thesis courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.
   Required courses:

4. Requirements for a degree of Master in Networking and Multimedia:
   Completion of 30 credits of courses, including 5 credits of required courses and 4 credits of thesis courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.
   Required courses:

5. Requirements for a Ph.D. degree in Computer Science and Information Engineering:
   Completion of 20 credits of courses, including 6 credits of required courses and 6 credits of thesis courses. Students are required to pass a qualifying examination within the first three years, publish at least one research paper in any journal listed in Science Citation Index or Engineering Index, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Undergraduate Courses

Required Courses
E0034 Engineering Mathematics (3/0): This course introduces methods of solving common types of ODE and numerical methods used in approximating equation solutions, functions, integrals, derivatives, and solutions to systems of differential equations.

E0175 Operating Systems (3/0): This course introduces fundamental concepts of operating systems, including computer-system structures, operating-system structures, processes, threads, CPU scheduling, process synchronization, deadlocks, memory management, virtual memory, file systems, I/O systems, and mass-storage structures.

E0334 Computer Organization (0/3): The goal of this course is to introduce the basic architecture and organization of the computer. It includes an overview, data representation and operation, device, processing unit, instruction sets, memory, and I/O systems of the computers.

E0342 Computer Programming (3/0): Covering the entire C or C++, this course is organized into five parts: the C subset-foundations of C/C++, C++ object-oriented features, the C/C++ function library, the C++ class library, and applications.

E0447 Advanced Programming Language (0/3): This course covers the entire Java, including its object-oriented features such as inheritance, function overloading, operator overloading, exception handling, class library, virtual machine, and applications.

E0644 Database (2/2): This course deals with the effective management and utilization of data. Topics include: objectives of database management system (DBMS); three-level architecture, data independence; file organization and access methods; relational systems, SQL language, data definition and manipulation, views; relational model theory, relational algebra and calculus; database environments, transactions, concurrency, security and data integrity.

E0651 Data Structure and Processing (3/0): This course introduces fundamental concepts of data structure, including basic concept, arrays, stack, queue, list, tree, graph, sorting technology, hash function and search technology.

E0761 Digital Systems (3/0) and Lab (1/0): Fundamental concepts of digital systems design are covered, including registers, counters, memory, programmable logic array, programmable logic array device, combinational logic circuits analysis, combinational logic circuits design, VHDL language, sequential circuits analysis and sequential circuits design.

E0790 Compilers (0/3): This course introduces fundamental concepts of compiler design, including scanning, LL parsing, LR parsing, semantic processing, symbol tables, run-time storage organization, code generation, and code optimization.

E1034 Introduction to Computers (2/2): This course provides an overview of computer science, including hardware, such as basic digital logic design and computer organization, and software, such as programming, algorithms, and data structures.

E1039 Introduction of Computer Network (3/0): This is an introductory course to modern day communication technologies. It provides a broad and thorough exploration of a variety of network technology and protocol suites, including wired and wireless networks. Topics to be covered include the design and implementation of computer communication networks, their protocols, and applications.

E1111 Algorithms (0/3): This course addresses the design and analysis of computer algorithms. Although theoretical analysis is emphasized, implementation and evaluation techniques are also covered. Topics include: big-O notation, sorting, useful data structures, graph algorithms and matrix calculations.

E3083 Assembly Language and System Programs (3/0): The primary goal of this course is to provide students with instruction in assembly language programming, computer hardware, and C/C++ language interface. The secondary goal of this course is to describe LINUX software engineering tools for developers of C software, shell script, loader, assembler and debugger.
S0439 Linear Algebra (0/3): This course covers Gaussian elimination, determinants, Euclidean and general vector spaces, basis, dimension, inner product spaces, linear transformations, changes of basis, eigenvalues and eigenvectors, special matrices, singular value decomposition, orthogonality, and least squares solutions.

S0450 Introduction to Probability Theory (0/3): Topics include: combinatorial analysis, probability space, axioms of probability, conditional probability and independence, discrete random variables, continuous random variables, jointly distributed random variables, properties of expectation and limit theorem.

S0487 Discrete Mathematics (3/0): This course centers on the mathematics most directly applicable to computing. From this course, students can develop maturity in mathematics and improve skills related to problem solving.

T0141 Special Topics Lab (1/1/1/1) T0141 Special Topics Lab (1/1): This course is designed to allow students to integrate theories and practical applications. Students choose topics they are interested in and discuss and/or do presentations regularly with professors. From this training, they learn how to do research, solve problems, and bring theories into reality.

M0821 Introduction to Multimedia (0/3): This course introduces fundamental concepts in multimedia. Important technologies about text compression, speech/audio compression, and image/video compression are introduced. Students will learn important concepts about multimedia for their future research.

E3551 Mobile Device Programming (0/3): In this class, we introduce several techniques for Android program development, such as: Eclipse and Android Studio. These tools can facilitate the process of developing an Android program. We also use several applications, such as: Google map, camera, recorder, media player, for further discussion to let students know the applicability of this course.

E3352 Practical Linux Operating System (0/3): This course lets students install a Linux operating system through understanding of the file system, GNU/GCC development tools, network configuration, secure server and shell scripting.

Elective Courses
There are many elective courses, including introduction of wireless lan, building embedded systems, introduction to information security, big data analytic techniques, image processing, personal communication systems, software project management, the industrial trend of information and communication techno, internship of enterprise, cloud computing, virtualization technology, advanced c programming, wireless lans and pans, ction mobile computing and rfid, network security, network programming, wireless network security, multimedia processing technology, wireless local area networks, the trend of information and communication technologies, practical data science on python, introduction to artificial intelligence, and so on.

Master’s Program in Computer Science and Information Engineering

Required Courses

E0349 Computer Algorithms (0/3): The objective of this course is to study paradigms and approaches used to analyze and design algorithms and to appreciate the impact of algorithm design in practice. It also ensures that students are familiar with fundamental algorithms and algorithmic techniques and understand how to analyze the running time of a given algorithm, how asymptotic notation is used to provide a rough classification of algorithms, and how a number of algorithms for fundamental problems in computer science and engineering work and compare with one another

E1354 Formal Language and Automata Theory (3/0): This course is to introduce students to the abstract models of digital computers, programming languages, and related matters. Students learn the foundations and basic principles of computer science.

T0081 Research Methodology (1/1): Basic skills of writing research papers/thesis and selecting
research topics will be delivered in class. Students will have a short presentation to show their direction of thesis writing. The instructor will invite domestic/international scholars to present their work as requested.

**T8000 Thesis (4):** By selecting a good topic for graduate students’ research and transforming an idea to reality, we try to organize the paper and the thesis.

**Elective Courses**

There are many elective courses, including multiple professional courses in the IT area, such as Pattern Recognition, Cryptology, Broadband Wireless Networks, Ubiquitous Computing Security, Machine Learning, Image Processing, Object-Oriented Software Engineering, Component-based Software Development Technology, Complex Networks, Data Mining, Distributed System, and so on.

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**Master’s Program, Department of Computer Science and Information Engineering**

**(English Taught Program)**

**Required Courses**

**T0081 Research Methodology (1/1):** Basic skills of writing research papers/thesis and selecting research topics will be delivered in class. Students will have a short presentation to show their direction of thesis writing. The instructor will invite domestic/international scholars to present their work as requested.

**E3454 Advanced Computer Algorithms (3/0):** This course addresses the design and analysis of computer algorithms. Although theoretical analysis is emphasized, implementation and evaluation techniques are also covered. Topics include: asymptotic notations, sorting, useful data structures, graph algorithms, matrix calculations, dynamics programming, and greedy algorithms.

**T8000 Thesis (0):** By selecting a good topic for graduate student's research and transforming an idea to reality, we try to organize and complete the thesis.

**Elective Courses**

There are many elective courses, including multiple professional courses in the IT area, such as Broadband Access Networks, Cryptography and Network Security, Wireless Local Area Networks, Digital Image Processing, Soft Computing, Internet Technology, Computer Networks, Wireless Sensor Networks and Internet of Things, Cryptographic Algorithms, Information Hiding, and Computer Vision, and so on.

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**Master’s Program in Networking and Multimedia**

**Required Courses**

**E3394 Networking and Multimedia (3/0):** In this course, we will focus on key technologies of computer communication systems and relevant security issues. Students will be able to adopt an engineering approach with research considerations to the design, implement, and evaluate communication systems. Recent topics on networking and communication domains will also be discussed.

**E3369 Cloud Computing (0/3):** This course will introduce the concept, deployment models, and service models of cloud computing. Topics include SaaS, PaaS, IaaS, virtualization, business models, mobile cloud computing, cloud security, etc. Various examples will also be given to describe how these models and services work. Students are required to design a cloud-related final research project and give presentations.

**T0081 Research Methodology (1/1):** Basic skills of writing research papers/thesis and selecting research topics will be delivered in class. Students will have a short presentation to show their direction of thesis writing. The instructor will invite domestic/international scholars to present their work as requested.
**T8000 Thesis (0):** By selecting a good topic for graduate student's research and transforming an idea to reality, we try to organize and complete the thesis.

**Elective Courses**

**Ph.D. Program**

**Required Courses**

**T0102 M0878 Seminar (I) & (II) (2/2):** The instructor supervises students as a study group in reading state-of-the-art research issues. Students will present their studies in English and deliver a draft paper for conference/journal submission. Students are free to choose their own research topic. However, an individual should discuss with his/her supervisor to decide a reasonable title for the presentation and paper.

**T8000 Thesis (0):** By selecting a good topic for graduate student’s research and transforming an idea to reality, we try to organize the paper and the thesis.

**Elective Courses**
The Department offers many elective courses, including multiple advanced and professional courses in the IT area, such as Digital Communication, Bioinformatics, Soft Computing, Text Mining, The Design of Multimedia Systems, Intelligent Web Information System, Semantic Web Technology, Mobility Management, Parallel Computing, Multimedia Digital Watermarking, and so on.
DEPARTMENT OF AEROSPACE ENGINEERING

Degrees Offered: B.S., M.S.

Chairman: Chen, Pu-woei (陳步偉)

The Department

The Department of Aerospace Engineering was founded in 1972, the first of its kind among Taiwan’s universities (http://www.aero.tku.edu.tw). The Department trains students at the bachelor and master's levels, with primary emphasis on flight vehicles. There are at present 19 faculty and staff, 511 undergraduate students, 36 graduate students (Master) and 14 graduate students (Executive Master) in the Department. Today, there are more than 3,000 alumni, who are now working in a variety of fields.

First year study focuses on the fields of mathematics, physics, humanities, and social science. The second, third and fourth years emphasize aerospace disciplines and related engineering sciences. In addition, juniors are required to obtain work experience in related aerospace companies during the summer session. A minimum of 128 credit hours is required for the bachelor’s degree. There are several areas of specialty available: Theoretical Aerodynamics, Computational Fluid Dynamics, Helicopter Aerodynamics, Combustion Stability, Composites, Optimal Theory, Aeroelasticity, Flight Simulation, Air Traffic Control, Aviation Safety, Trajectory Optimization and Optimal Control of Space Vehicles, and so on. A minimum of 17 credit hours and a thesis are required for the master’s degree. The Department of Aerospace Engineering and its graduate program have been accredited by IEET (a full signatory of the Washington Accord).

Faculty

Professor Emeritus
Chao-kang Feng (馮朝剛)

Professors
Chen, Tzeng-yuan (陳增源); Ing, Yi-shyong (應宜雄); Niu, Yang-Yao (牛仰堯); Tyan, Feng (田豐); Lee, Shi-min (李世鳴); Wang, Yi-ren (王怡仁); Shiau, Jaw-kuen (蕭照焜)

Associate Professors
Chang, Yeong-kang (張永康); Chen, Pu-woei (陳步偉); Tang, Jing-min (湯敬民); Wan, Tung (宛同); Hsiao, Fu-yuen (萧富元); Hung, Chien-Chun (洪健君)

Assistant Associate Professor
Kaiti Wang (汪愷)

Degree Requirements

1. Requirements for a degree of B.S. in Aerospace Engineering:
   Completion of 128 credits of courses, including 95 credits of required courses and 17 credits of elective aerospace engineering courses.

2. Requirements for a Master’s degree in Aerospace Engineering:
   Completion of 29 credits of courses, including 3 credits of required courses and 2 credits of seminar. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and to pass an oral examination.

   Required courses:

3. Requirements for an Executive Master’s degree in Aerospace Engineering:
   Completion of 27 credits of courses, including 3 credits of required courses. Students are also
required to submit a written master’s thesis completed under the supervision of a faculty member and to pass an oral examination.

Course Descriptions

Undergraduate Courses

E0034 Engineering Mathematics I (3/0): This course aims to develop techniques for solving linear, nonlinear first and second order ordinary differential equations along with engineering applications, which include undermined coefficient method, variation of parameters, power series solutions, Laplace transform method and phase plane analysis, etc.

E0034 Engineering Mathematics II (0/3): This course covers advanced topics in Linear Algebra, including matrix, eigenvalue problems and vector operations, Laplace transforms, Fourier series, Fourier integrals and transforms for various engineering applications.

E0090 Space Flight Mechanics (0/3): Motion of aerospace vehicles in space: Two-Body Motion, Orbit determination. Orbit Maneuvers, Relative Motion, Interplanetary Trajectories and Introduction to Rocket Theory.

E0156 Finite Element Method (2/0): This course presents a clear, easy-to-understand explanation of finite element fundamentals and enables students to use the method in research and in solving practical, real-life problems. It develops the basic finite element method of mathematical formulation, beginning with physical considerations, proceeding to the well-established variation approach, and placing a strong emphasis on the versatile method of weighted residuals, which has proved to be important in non-structural applications. This course also demonstrates the tremendous power of the finite element method to solve problems that classical methods cannot handle, including elasticity problems, general field problems, heat transfer problems, and fluid mechanical problems. They supply practical information on boundary conditions and mesh generation, offer a fresh perspective on finite element analysis with an overview of the current state of finite element optimal design, and give students the real insight needed to apply the method to challenging problems.

E0165 Automatic Control System (3/0): This course introduces analysis and design of continuous-time control systems using frequency and time-domain methods. Also covered are the classical methods of control engineering, which are: Laplace transforms and transfer functions, root locus design, Routh-Hurwitz stability analysis, frequency response methods, including Bode, Nyquist, and Nichols; steady-state error for standard test signals; second-order system approximations, and phase and gain margin and bandwidth.

E0180 Mechanics of Materials (0/3): This course introduces students to the fundamental principles and methods of solid mechanics. Topics include: analysis of static equilibrium, support conditions, analysis of static-determinate planar structures (bars, beams, trusses), stresses and strains in structures, states of stress (shear, bending, torsion), statically indeterminate systems, and displacements and deformations.


E0222 Aerodynamics II (0/2): The dynamics of gases especially of atmospheric interactions with moving objects is studied. Contents include: finite wing theory, downwash and induced drag, linearized compressible flow with small perturbation assumption, airfoil in subsonic flow. Prandtl-Glauert transformation, supersonic flow, critical Mach number, and brief introduction of Hypersonic flow are also covered.

E0296 Fluid Mechanics Lab (0/1): Fluid Mechanics has been widely applied in all aspects of the engineering field. The essential objective of the course of the Fluid Mechanics is to help students to understand fundamental fluid mechanical related phenomena and natural laws, so that they can apply the knowledge to various scientific fields. Since most phenomena of flow are very complicated, they
have to be verified experimentally. The objective of this course is to equip students with the various experimental techniques so that they can incorporate the results obtained in the laboratory with the knowledge learned from the book.

E0300 Fluid Mechanics (3/0): This course offers an introduction to the basic phenomena and principles of fluid flow. We discuss fluid properties, fluid statics, conservation of mass, momentum and energy. Emphasis is on quantitative analysis of velocities, pressures, shear stresses, and flow forces. The application of basic fluid mechanics concepts to the analysis of pipe flow, and flow over or around objects are stressed in homework assignments and exams. Flow phenomena are illustrated in CD-ROM tutorials and laboratory demonstrations. Measurement of fluid properties, pressures, velocities, and flow forces are performed in laboratory sessions.

E0371 Engineering Vibrations (2/0): This course focuses on the study of oscillatory motions of bodies and the forces associated with them. It reviews several fundamental principles of mechanics, and then covers the following topics: system modeling, modal analyses of forced vibration problems, finding dynamic responses of discrete and continuous systems, and measurements of characteristic parameters of vibration systems. It is very important for both theoretical investigations and engineering applications.

E0373 Workshop Practice (0/0): Students taking this course need to carry out on-site practical training at various organizations. This is designed to help students gain experience in practical applications of the knowledge learned in the course.


E0402 Introduction to Aeronautical Engineering (1/0): The invention of the heavier-than-air flying machine is one of the remarkable achievements in the 20th century. The main objective of this course is to offer an introduction to aeronautical engineering from the technological and historical points of view. This course will include the following topics: the history of flight, the development of Taiwan aerospace industry, the principles of flight, aircraft structures and material, the power plant, navigation system, and airworthiness.

E0404 Aircraft Materials (0/2): Since aluminum was first used in the beginning of the 20th century as a structural material for the aviation industry, all kinds of new materials have been developed and tailored to fit the needs of airplane and engine builders around the world. The main objective of this course is to introduce characteristics of materials used in aviation industries, which includes basic phase diagrams, thermal processes, alloys/super alloys and recently developed composite materials.

E0406 Aircraft Engines (3/0): Aircraft Engines is a complicated course and covers a vast range of disciplines. This course covers fluid mechanics, thermodynamics, aerodynamics, gas dynamics, strength of material, materials, etc. It introduces the design and working principles of ramjet, turbojet, turbosfan, turboshaft and turboprop. It also teaches the design and analysis of the major components of aircraft engines such as inlet, compressor, combustor, turbine, nozzle and afterburner. The basic physical concepts are also reviewed in this course.

E0408 General Navigation (2/0): This subject area is the study of the theory and practical application of heading, speed, altitude, and temperature pressure; position indicating on aircraft. During this course the student will learn how to operate within the civil aviation regulations (CCAA, FAA, EASA) and gain an understanding of how to utilize instrument navigation systems. The student will learn about the operation of aircraft instruments and navigation systems and develop their ability to maneuver the aircraft only with reference to instruments. This course also addresses how to check, operation and maintain various types of aviation instruments.

E0431 Advanced Strength of Materials (2/0): Advanced Strength of Materials is an extended course that follows on from the course ‘Mechanical of Materials’. Specialized topics include: pressure vessels analysis, thermal effects, dynamics loading, statically indeterminate beams, deflection analysis, and column buckling analysis.
E0466 Dynamics (3/0): Dynamics is a subject rich in its varied applications; therefore, it is important that students develop a feel for realistically modeling an engineering problem. Consequently, this course is to provide students a working knowledge of the motions of bodies and the forces that accompany or cause those motions. The topics include the plane and 3-D kinematics of particles, plane and 3-D kinetics of particles, and the kinematics and kinetics of rigid bodies in plane motion, which are the bases of further studies in Aerospace Engineering.

E0671 Engineering Application of Computers (0/3): Numerical analysis is the study of computer algorithms developed to solve the problems of continuous mathematics. Students taking this course gain a foundation in approximation theory, functional analysis, and numerical linear algebra from which the practical algorithms of scientific computing are derived. A major goal of this course is to develop skills in analyzing numerical algorithms in terms of their accuracy, stability, and computational complexity. Topics include: best approximations; least squares problems (continuous, discrete, and weighted), eigenvalue problems, and iterative methods for systems of linear and nonlinear equations. Ordinary differential equations appear in the movement of celestial bodies (planets, stars and galaxies); optimization occurs in portfolio management; numerical linear algebra is essential to quantitative psychology; stochastic differential equations and Markov chains are essential in simulating living cells for medicine and biology.

E0693 Electrical Engineering (2/0): This course covers the principles and applications of basic electric components and systems for aerospace engineering students. Major topics include principles of basic electric theory, electric circuit components, Kirchhoff’s voltage law, Kirchhoff's current law, resistive network, Thevenin equivalent network, AC circuits, transient analysis, frequency response, filter, principles of electro mechanics, and an introduction to electric machines.

E0828 Mechanical Drawing I (1/0): Engineering drawing is concerned with the expression of technical ideas or ideas of a practical nature, and it is the method used in all branches of technical industry. The main objective of this course is to introduce the basic drafting skills, arrangement of views, shape description, dimensioning, principal of datum, sectional view, and auxiliary view.

E0828 Mechanical Drawing II (0/1): Engineering drawing is concerned with the expression of technical ideas or ideas of a practical nature, and it is the method used in all branches of technical industry. Besides the traditional handmade drawing that is taught in the first semester, the main objective of this course is to teach students the basic skill of computer aided drawing. CAD has been widely used in the technology industry for designing and manufacturing. This course will include the following topics: the fundamental of CAD, sectional view, and 3D-modeling.

E0830 Manufacturing Processes (0/3): Manufacturing is the process of converting raw materials into products. Manufacturing also involves activities in which the manufactured product itself is used to make other products. Examples could include large presses to shape sheet metal for appliances and car bodies, machining to make fasteners, such as bolts and nuts, and sewing machines to make clothing. The process of manufacturing is a complex of activities involving a wide variety of sources and activities, such as the following: design, machinery, process planning, materials, manufacturing, quality control, etc.

E0865 Statics (0/3): Statics is the specific field of study dealing with forces in equilibrium and/or bodies held in equilibrium by the forces acting on them. Statics is a part of the broad field of mechanics which is the study of the action of forces on material bodies. In the course, the rigid body (bodies) in equilibrium, the elements of statics in two and three dimensions, centroids, analysis of structures and machines are considered.

E0961 Electronics (0/2): This course introduces the principles and applications of basic electronic components and systems for aerospace engineering students. Major topics include principles and applications of operational amplifier, active filters, semiconductors and diodes, bipolar junction transistors, field effect transistors, power electronics, digital logic circuits, digital systems, electronic instrumentation and measurements.

E0959 Advanced Fluid Dynamics (0/2): The purpose of this course is to introduce the viscous flows of incompressible fluids, General properties of Navier-Stokes equations, Exact solutions of the full N-S equations, Low-Reynolds number flow, High-Reynolds number flow, Boundary layer equations for
incompressible flow, Exact and Approximate solutions of the boundary layer equations, Boundary layer separation, Boundary layer control and high lift device of airplane.

E0962 CAD/CAM (0/3): In the life cycle of engineering products, computer assisted design and manufacture play a major role in success. They not only shorten complex engineering work but also improve the product’s performance and quality assurance. The purpose of this course is to establish the comprehensive overview of the application of computers to the design work. This course will also train students to use Pro-Engineer software to design various 3D models.

E1034 Introduction to Computers I (2/0): An introduction to the modern computer science and its application will be given in this course, which offers a rough idea and basic knowledge of how computers and networks function. This course will cover 12 topics, including Data storage, Number representation, Internet and TCP/IP, Internet and WWW, Wired and wireless communication, and so on. A final team project about application of technology of computer to aerospace engineering should be submitted as one of the class evaluations. There will also be an oral presentation as part of the final project.

E1034 Introduction to Computers II (0/2): This course teaches methodologies related to programs. The instructor will spend the majority of time teaching Fortran and the last three weeks on important commands in Matlab. Fortran was developed for scientific and engineering computation and is widely used throughout the world. Its meticulous structure is also a good tool for beginners to establish their programming logic. Fortran 95 will be the basic tool used; however, that will also be compared with Fortran 77, which is the most popular version in the past. On the other hand, Matlab, on the basis of matrix operation, is widely used in the automatic control field. There will be a midterm qualification examination after a midterm paper test to ensure that students taking this class acquire the ability to write programs.

E1052 Rocket Propulsion (2/0): The purpose of this course is to introduce the basic technology, performance and design rationale of rocket propulsion. The course contents provide an understanding of basic principles, descriptions of key physical mechanisms and designs, and an appreciation of the applications of rocket propulsion to flying vehicles.

E1106 Electronic and Circuit Laboratory (0/1): This course provides students with an introduction to electronic circuits measurements. Topics include: basic measuring instruments, resistors, capacitors, inductors, transformers, diodes, transistors, operational amplifiers, and logic circuits.

E1107 Engineering Materials (2/0): The main objective of this course is to present the basic fundamentals of materials science and engineering. Materials science involves investigating the relationship that exists between the structures and properties of materials. On the other hand, materials engineering is, on the basis of those structure-property correlations, designing or engineering the structure of a material. This course will present the basic atom structures, structure of crystalline solids, and mechanic properties of metals.

E1108 Workshop Practice (1/0): This course will provide students, as prospective excellent engineers, with practical Aerospace Engineering skills through their participation in practical machinery work. This course will also train students in safety aspects and discipline. After successful completion of this course, students will be able to exercise practical judgment and make advances in their understanding of machining work and in the quality of their craftsmanship.

E1178 Aircraft Structures (3/2): Aircraft structure analysis plays an important role in aircraft design. Therefore, the course of aircraft structure will provide students with fundamental concepts in the analysis and design of aircraft structures, and develop unified analytical tools for the prediction and assessment of structural behavior. In addition, the course will help students to study the structural analysis method and develop a thorough understanding of the important factors which must be considered in the design of aircraft structural components.

E1179 Aircraft Design (I) (3/0): This course introduces a preliminary layout of a military or civil transport aircraft using design and calculation techniques developed in aerospace engineering courses. Materials covered include design goals, aerodynamics review, performance analysis, wing/fuselage layout, weight and wing loading estimations, engine and material selections, stability analysis, etc.
E1516 Special Topics in Rotary-Wing Aircraft (0/2): Helicopters are highly capable and useful rotating-wing aircrafts that have a variety of civilian and military applications. Their usefulness lies in their unique ability to take off and land vertically, to hover and to fly forward, backward, or sideways. This course begins with a technical history of helicopter flights, then covers basic methods of rotor aerodynamic analysis (Momentum Theory and Blade Element Theory) and related issues associated with helicopter performance, and ends with rotor blade design.

E1521 Aircraft Systems (3/0): Aircraft Systems provides a basic introduction to the function and operation of aircraft systems, including basic aircraft structures, hydraulics, pneumatics, landing-gear, electrical system, air conditioning, flight control systems, flight management systems, fuel systems, aircraft instruments, avionic systems, and engines.

E1540 Aircraft Performance Analysis (0/2): This course familiarizes students with the fundamentals of airplane design. The airplane will be treated as a point mass and the equations of motion are derived. The only parameters which determine the performance of an airplane are wing loading (W/S), lift-to-drag ratio (L/D), thrust-to-weight ratio (T/W) and the (thrust) specific fuel consumption of the powerplant. Factors for discussion include descent, glide, and cruise, which covers range and endurance, climb, turn, take-off, and landing.

E1555 Air Traffic Control (3/0): This course provides an analysis of Air Traffic Control (ATC) functions, studies the history, development, and structure of the National Airspace System, and explores navigation aids, ATC radar systems, terminal and end route control, flight service and weather facilities, instrument flight rules, and airspace. It helps students understand the procedures used in radar and non-radar air traffic control and the future enhancements to the national airspace system are also included.

E1556 Avionics System (2/0): Topics include: the evolution of avionics, system design considerations, digital technology, flight decks and cockpits, navigation systems, communication systems, future trends and developments.

E1557 Modern Control System Design (0/3): This course is an advanced class in automatic control. Students will learn from this course how to stabilize an unstable system and choose a set of good parameters that gives better performance to a system. Starting from reviewing basic ideas in automatic control, this course will introduce several controller designing skills, such as output feedback with PID controller and frequency domain design. State-space analysis and design will also be introduced in class. Homework, midterm examinations, and a final team project will be used for evaluation. Several Matlab commands will also be included in the lectures.

E1582 Aviation Quality Assurance (0/2): Aviation safety has been a topic of great concern to the general public since the very first day airplanes took to the sky. The best way to prevent or oversee any problems is to establish a quality management system that sets industry standards and complies to government requirements. This course will provide students with knowledge on basic quality systems, aviation quality assurance processes and related essential skills needed to manage an organizational safety system.

E1598 Aerospace Engineering Experiments (1/0): This course is designed to familiarize students with the operation and control of PXI system, LabView, and magnetic bearing system. The students are also required to operate the industrial standard FANUC robot in the computational dynamics and control lab.

E1598 Aerospace Engineering Experiments (0/1): This is an engineering laboratory course for aerospace engineering seniors. Students need to understand the engineering experimentation through design and execution of “project” experiments. Students construct and test equipment, make systematic experimental measurements of phenomena, analyze and discuss data, and complete the experimental report finally. Groups of five or six students work together on one project during the semester.

E2015 Signals and Systems (0/2): This course presents the mathematical study of signals and systems. Major topics include the MATLAB tool, natural response of first and second order systems, rational function and partial fraction expansion, qualitative analysis of systems, transfer function and convolution, frequency response, Bode plot, Fourier transform, discrete time signals and systems.
E2053 Flight Mechanics (0/3): The goal of this course is to provide students with the fundamentals of airplane design. The static stability of the airplane will be presented first. The rigid body dynamics is then applied to the study of airplane's motion. With the perturbation method used, the equations are linearized. During the linearization, the aerodynamic stability derivatives are introduced. Since the derivatives are the functions of the aerodynamic and physical properties of the airplane and are important in understanding the motion of the airplane, their physical meanings are discussed. Based on the derived linearized equations of motion, the aerodynamic transfer functions, dynamic responses, handling and flight qualities, and autopilot design are presented.

E2139 Fundamentals of Astronautics (1/0): This course covers basic ideas of astronautics, including satellite subsystems, two-body problem, 3D trajectory, orbit change, relative motion, gravity assist, three-body problem, and booster performances, etc. As part of this course, a tour to the National Space Office, the space center responsible for the space activities of our country, will be arranged. In addition, there will be a midterm project of designing a satellite so that students will have a clearer understanding of the field of astronautics.

E2535 Introduction to Nano and Nano Engineering (3/0): Micro and Nano technology is a fundamental component of every aspect of modern engineering, including aerospace engineering. This course is designed to introduce multidiscipline expertise, while presenting students with a theoretical background, processing techniques, and engineering applications. This technology’s correlation to aerospace engineering (micro air vehicles) will also be addressed.

E2593 Aerospace Project Management (0/2): Project Management is both people and technology-oriented. With full understanding of project management concepts, the course will greatly enhance aeronautical engineering students’ competitiveness as project managers.

E2642 Heat Transfer in Electronic Devices (0/2): Quite a few students work in heat transfer related companies after graduating from our department. This course introduces the physical mechanisms and basic principles behind the three heat transport modes: conduction, convection, and radiation. We also teach in detail external and internal forced convections, natural convection as well as boiling and condensation. This course will teach students how electronic heat transfer devices operate and how to measure their performance. Finally, this course will teach students how to use the electronic heat transfer simulation software known as CEPAK.

E2719 Introduction of System Engineering (0/2): System engineering is both a technical and management process. It is a discipline that ties together all aspects of a program to assure the individual parts assemble and sub-assemble. It is also a logical sequence of activities and decisions transforming an operational need into a description of system performance parameters as well as a preferred system configuration. This course introduces basic system engineering and analysis techniques, including “statement of work,” “work breakdown structure” and “risk management.”

E2749 Flight Safety (0/2): An in-depth course on the modern civil aviation safety analysis. Materials covered including introduction of safety, aviation safety theories, human factors (both mental and physical), mechanical design or maintenance factors, environmental factors, modern air traffic management (CNS/ATM), aviation accidents analysis, and aviation accident prevention, etc. Besides homework and final exam, each student is required to submit a project report at the end of semester.

E2858 Management and Technology (0/2): Exerting the result of technology development efficiently needs good management understanding. This course mainly discusses the interrelationship and interaction between technology and management. It also teaches management concepts through practical case studies to demonstrate how to integrate management with technology.

E3224 Introduction to Green Energy Technology (0/3): This course introduces green energy technology, such as solar energy, wind energy, fuel cell, tidal energy, and so on. The main focus of the course will be an introduction to technological systems used in solar energy, wind energy and fuel cells. It will consist of demonstrations of these energy sources as well as movie watching.

E3223 Thermodynamics I (3/0): Thermodynamics is an exciting and fascinating subject that deals with energy, the substance of life. Thermodynamics has long been an essential part of engineering curricula all over the world and has a broad application area, ranging from microscopic organisms to...
common household appliances, transportation vehicles, power generation systems, and air conditioning systems. This course begins with an introduction of thermodynamics, including energy, energy transfer, general energy analysis, properties of substances, energy analysis of closed and open systems, and the second law of thermodynamics and entropy. The second part of this course covers the applications of thermodynamics, including gas power cycles, vapor and combined power cycles and refrigeration cycles.

**E3225 Special Topic on Small Wind Turbine System (3/0):** A wind turbine combines the science and engineering of aerodynamics, generators, design and manufacture, energy conversion, energy control and so on. Thus, wind turbine is a form of system engineering. Students taking this course will gain basic concepts in system engineering.

**E3226 Aviation Weather (0/2):** Introduction to weather phenomena that affects flight such as the atmosphere layers, wind and air parcel stability, air mass and fronts, precipitation, gust wind, low level wind shear, thunderstorm, ice accretion, etc.

**E3267 Fundamentals of Heat Transfer (0/2):** Quite a few students work in thermal management companies after graduating from our department. This course introduces the physical mechanisms and basic principles behind the three heat transport modes: conduction, convection and radiation. Convection is the more complex heat transport mode. This course therefore explains in detail the internal and external forced convections, natural convection as well as boiling and condensation. We also guide students in operating electronic heat transfer devices and measuring their performances.

**E3272 Thermodynamics II (0/3):** Thermodynamics is an exciting and fascinating subject that deals with energy, the substance of life. Thermodynamics has long been an essential part of engineering curricula all over the world and has a broad application area, ranging from microscopic organisms to common household appliances, transportation vehicles, power generation systems, and air conditioning systems. This course begins with an introduction of thermodynamics, including energy, energy transfer, general energy analysis, properties of substances, energy analysis of closed and open systems, and the second law of thermodynamics and entropy. The second part of this course covers the applications of thermodynamics, including gas power cycles, vapor and combined power cycles and refrigeration cycles.

**E3325 Aviation Management (3/0):** This course introduces the latest market trends in the international aviation industry. Through this course, students will better understand the competitive nature of the industry and gain insights into opportunities available. Students will also develop business management skills – such as budget planning, project management, and risk management—required for working in local aviation enterprises such as AIDC, China Airlines, AirAsia, and EGAT, among others. The course will also provide case studies to prepare students for the aviation industry.

**E3436 English for Aircraft Systems (2/0):** Through learning the terminologies, phrases, grammar and sentences to be used in technical documentation of civil aviation repairs and maintenance on site field services. Students are able to understand the descriptions in the technical documents, and express the ideas in Chinese, then execute the given procedures.

**E3482 Instrumentation (2/0):** This course encourages learners to investigate the purpose of air navigation and how they contribute to the overall effectiveness of aircraft operation. Topics include warning systems, pilotage, dead reckoning, radio navigation, LORAN, global positioning systems and the use of civil aviation publications. Topics include a study of instruments, instrument flight charts, instrument flight planning, approach procedures, and compliance with ATC procedures.

**E3483 Aviation English (0/2):** This course contains a carefully sequenced selection of training material, giving progressive, systematic practice in radiotelephony phraseology for students. The exercises are designed primarily to teach operational fluency in the “Routine” phraseology for IFR flight. This course is suitable for students who wish to learn the language used for radiotelephony communications.

**E3484 Introduction of PPL Ground Course (2/0):** The objective of the course is to give a basic introduction to the ground courses needed for getting a Private Pilot License.
E3488 Aviation Program Internship (0/9): This course is part of our new Civil Aviation Program that cooperates with airliners and institutions. The Department of Aerospace Engineering has signed a contract with China Airlines, EVA Airways, TransAsia Airways, and Aerospace Industrial Development Corporation to promote University-Industry cooperation. The purpose of this course is to help students who possess the fundamental knowledge of aeronautical engineering to obtain further practical experience in the field. Qualified senior students may apply for internship to participate in this program. This is a nine credit hours course and interns should be available to work in the contracted company during the second semester of his/her senior year.

S0290 General Physics (3/0): Basic concepts and knowledge of fundamental physics concepts every engineering student should know are introduced in this course. Topics like kinematics, mechanics, and thermodynamics will be taught. Students should also have a basic knowledge of algebra and basic calculus. The operation of vectors will also be introduced in this course.

S0291 General Physics Lab (1/0): Emphases of these experiments are placed on data collection and data analysis including curve fitting and plotting with computers. Details regarding experiment contents and procedures will be explained in class.

S0325 Calculus I (3/0): This course is an introduction to the topics of differentiation, integration and infinite series. It involves research on variation and practical applications in the areas of science, engineering and economics. Calculus consists of differentiation and integration. The former is an operation of computing derivatives and the latter provides a general method to compute areas and volumes.

S0325 Calculus II (0/3): The main topics of calculus are functions, limits, differentiations, applications of differentiation, integration, applications of integration, integration skills, sequence and series, calculus of multivariable. Calculus is the foundation of modern science, which provides quantitative analysis of the basic theory and tools in multiple disciplines. In this course, students will learn advanced mathematical theories and develop the ability to perform calculation in various disciplines.

S0439 Linear Algebra (0/2): This course offers an introduction to linear algebra that is useful in various fields. Starting with matrix arithmetic, the lectures cover several topics, including determinants, LU factorization, introduction of vector space, linear transformations, bases and dimensions, inner and outer product, and similarity and diagonalization. Computer programming will be applied so that students learn how to make use of computer technology and linear algebra to solve engineering problems. Homework, midterm and final examinations will be used for evaluation.

E3634 Basic Engineering Mathematics (0/3): This course introduces freshmen to basic mathematics, laying the foundation for advanced engineering mathematics. The topics cover trigonometric functions, vectors, matrices, vector analysis, linear algebra, and Fourier series. Conceptual understanding, as well as actual calculation are the primary focuses. This course also plays an important role in serving as a bridge to connect the content of high school mathematics to college engineering mathematics.

M0442 C Language Programming (0/3): This course is a fundamental one for C language, and it is designed for students without any previous learning in computer programming. The content will start from introduction of the compiler to topical tutorials on variable types, operators, input/output, program structures, array, data structure, etc.

Master’s Program

E0439 **Advanced Aerodynamics (0/3):** Topics include: basic concepts, review of fluid dynamics, theory of wing sections, conformal transformation, Theodorsen transformation, 2-D incompressible flows, 3-D incompressible, incompressible slender body theory, biplane theory, compressible aerodynamics, supersonic aerodynamics, compressible slender body theory.

E0445 **Advanced Dynamics (2/0):** Topics include: kinematics of motion, particle dynamics, Lagrange’s equations; rigid body dynamics, including Euler’s equations, the Poinsot construction, spin stabilization, and the rotation matrix; vibrations of coupled systems, orthogonality relationships, generalized coordinates and generalized system parameters; Hamilton’s equations, canonical transformations, and Hamilton-Jacobi theory. Also covered are their applications to orbital problems.

E0569 **Optimum Engineering Design (2/0):** Topics include: Classical tools in structure optimization, classical methods for constraints problem, linear programming, the simplex method, duality in linear programming, minimization of function of several variables, specialized quasi-Newton methods, constrained optimization, the Kulm-Tucker conditions, quadratic programming problems, sensitivity of optimum solution to problem parameters, aspects of the optimization process in practice, fast analysis techniques.

E0608 **Structure Dynamics (2/0):** Topics include: One-degree-of-freedom motion, mass-spring-damper system, equations of motion, analytic solutions, force sense and integral, harmonic excitation, multiple-degree-of-freedom, matrix formulation and eigenvalue problem, proportional damping and forced response, state variable approach, continuous system, equations and boundary conditions, analytic solutions to continuous system, energy method B-E beam, Timoshenko beam, Galerkin methods, Rayleigh-Ritz method.

E0754 **Elasticity (3/0):** Topics include: an introduction to cartesian tensors, stress, strain, behavior of engineering materials, linear elastic behavior, boundary value problems, torsion of shafts.

E0764 **Digital Control System (2/0):** Digital control systems provide the necessary insight, knowledge, and understanding required to analyze and design computer-controlled systems, from theory to practical implementation. This course includes an introduction to sampled-data control systems, discretization of analog systems, discrete-time signals and systems, causality, time-invariance, Z-transforms, stability, asymptotic tracking, state-space models, controllability and observability, pole assignment, deadbeat control, state observers, observer-based control design, optimal control. In particular, students will learn modeling and analyzing feedback control systems in which the plant is an analogue, continuous-time system, but where the controller is a digital computer. Once students have acquired these skills, they will learn how to design digital controllers using both traditional transfer function based approaches.

E0795 **Linear System (2/0):** Topics include: Linear spaces and linear operators, representations of linear system, state space equation, controllability, observability, realization, stability, state feedback and state estimator.

E0906 **Combustion (0/2):** Topics include: Chemical reactions, review of chemical kinetics, conservation equation for multicomponent reacting system, deformation and deflagration waves of premixed gases, premixed laminar flame, gaseous diffusion flames, turbulent flames.

E0938 **Optimal Control (0/2):** This course covers: ordinary minimization problem, hypersurface in RN and minimization with equality constrains, a mathematical programming problem - conditions for optimality, necessary conditions for optimality in a discrete time optimal control, dynamic programming, the Hamilton-Jacobi equation and minimal principle, precise statement of the minimum principle, application to the linear quadratic problem, a function analysis approach to linear quadratic problem with fixed end points.

E1371 **Aeroelasticity (0/2):** This course introduces the following topics: uniform string dynamics, uniform beam torsional dynamics, uniform beam bending dynamics, potential flow theory, incompressible flow about airfoil, introduction to static aeroelasticity, wind tunnel models, introduction to aeroelastic flutter, lifting surface flutter, multiple D.O.F. flutter, advanced methods for solving flutter boundary, 3-D aeroelastic analysis, static aeroelastic-nonuniform lifting surface, complete aircraft analysis.
E1630 Acoustics (0/3): Topics include: introduction to acoustics, basic fluid mechanics and thermodynamics, basic properties of acoustics wave, quantitative measure of sound, reflection and transmission phenomena.

E1631 Theory for Experimental Measurements (0/2): This course introduces basic concepts, data analysis, flow visualization, hot wire system, laser Doppler velocimetry, image processing computer graphics.

E1632 Viscous Fluid Flow (0/2): Topics include: a review of the fluid dynamics concept, fundamental concepts of viscous flow, fundamental equations of Navier-Stokes equations, laminar boundary layer equations for 2-D incompressible flow, approximate methods of 2-D boundary layer equations, flow stability, linear stability theory, introduction to turbulence, fundamentals of turbulent flow, mixing length theory, turbulent boundary layers with pressure gradient.


E1725 Structure Statics (0/2): Topics include: development of truss equations, development of beam equations, development of the plane stress and plane strain equations, development of the linear strain triangle equations, compression of element, axisymmetric elements, applications of axisymmetric elements, isoperimetric formulation of bar element, isoperimetric of the plane element, Gaussian quadrature, and the tetrahedral element.

E1727 Similarity Method and Perturbation Method (0/3): This course introduces: general dimensional theory, similitude and modeling, dynamic similarity derived from governing equation and boundary conditions, self-similar solution, local and far field similarity solutions, application to problems from continuum mechanics; the nature of perturbation theory, some regular and singular perturbation problems, the method of matched asymptotic expansions, the method of strained coordinates, and applications to problems from fluid mechanics and gas dynamics.

E1728 Flight Safety Analysis (0/3): This is an advanced course on the modern civil aviation safety analysis. Materials covered include an introduction of safety, aviation safety theories, human factors (both mental and physical), mechanical or maintenance factors, environmental factors, air traffic management (CNS/ATM), aviation accidents analysis, aviation prevention, etc. Besides homework and a final exam, each student is required to submit a project report at the end of the semester.

E1729 Nonlinear Control Systems (0/3): This course offers an introduction to the analysis and design of nonlinear systems. Topics include: linearization, equilibrium points, limit cycles, chaotic attractors, stability, Lyapunov’s methods, describing functions, Popov and circle criteria, contraction mappings, exact linearization, variable structure, simulation.

E1940 Estimation and Control (0/2): This course presents mathematical approaches for estimation and control of dynamic systems. Fundamental state estimation theories and implementation algorithms are covered in the course. Major topics include reviews of probability and random variables, least square estimation, propagation of states and covariance, Kalman filters, extended Kalman filters, $H_\infty$ filters, and some related special topics for aerospace engineering.

E2125 Convective Heat Transfer (0/2): This course is an introduction to the fundamentals of heat transfer modes of conduction, convection, and radiation. A brief introduction of the physical concepts of convection, studies of external forced convection, internal forced convection and natural convection, specific equations and correlation for finding heat-transfer coefficients for various geometries and fluid conditions, and heat exchanger analysis are also covered.

E2192 Satellite Image System (3/0): Various techniques to enhance, de-blur, segment, and describe image features will be introduced. This course will also present the fundamentals of digital image formation, color models, halftoning, and restoration, and include projects based on implementation of these techniques. Students will be encouraged to develop application-specific modules for medical, satellite, and natural images. Topics will include edge detection, morphological processing, texture...
analysis, feature extraction, sampling and transforms.

**E2376 Numerical Methods for Engineers (0/2):** This course introduces numerical methods for engineers. Topics covered include: solving large systems of linear equations, finding the roots of a nonlinear equation, curve fitting, numerical differentiation and integration, solving ordinary and partial differential equations. The objective is to make students understand theoretical backgrounds, error analysis, and computer arithmetic of numerical methods.

**E2715 Advanced Astrodynamics (3/0):** Topics include: two-body problem, orbit maneuver, rigid body dynamics, satellite attitude dynamics, satellite attitude control, rocket performance, space environment, reentry dynamics, the restricted three-body problem, interplanetary trajectories.

**E2931 Numerical Grid Generation (0/3):** Numerical grid generation arose from the need to compute solutions to fluid dynamics PDEs on physical regions with complex geometry. Course materials include structured and unstructured grids, mapping and invertibility, transfinite interpolation, algebraic methods, complex variable methods, PDE methods (elliptic, hyperbolic, and parabolic), and several unstructured grid concepts such as advancing fronts and Delaunay triangulation.

**E2933 Computational Gas Dynamics (0/3):** Computational Gas Dynamics is a branch of computational fluid mechanics which deals with compressible flow. The unique aspects of computational gas dynamics include two phenomena that do not appear in other branches of fluid mechanics. These phenomena are waves (normal shocks, oblique shock and expansion waves) and choking flow (isentropic, isothermal choking). A parallel to the shock seen in gas dynamics is the hydraulic jump witnessed in open-channel incompressible flow. Nevertheless, the shocks in many aspects do not appear in the hydraulic jump, e.g. oblique shock. Choking occurs when there is a disparity between the area difference of the nozzle and the throat and the pressure drop between the inlet and outlet, causing the creation of a shock wave before the outlet to make up for that difference.

**E3007 Computational Heat Transfer (0/3):** In the field of fluid mechanics, multiphase flow is a generalisation of the modeling used in two-phase flow to cases where the two phases are not chemically related (e.g. dusty gases) or where more than two phases are present (e.g. in modeling of propagating steam explosions).

**E3257 Vibrations and Wave Motion (3/0):** This course deals with the study of elastic wave propagation in solids. It reviews several fundamental principles of wave motion before covering the following topics: elementary theory of one-dimensional waves and vibrations in strings and rods; two-dimensional theory of waves in beams and plates; system modeling; finding transient and steady-state responses of continuous systems; and measurements of characteristic parameters of vibration systems. Topics discussed are essential for both theoretical investigations and engineering applications.

**E3337 Computational Microfluid Dynamics (0/2):** In fluid mechanics, multiphase flow is a generalization of the modelling used in two-phase flow to cases where the two phases are not chemically related (e.g. dusty gases) or where more than two phases are present (e.g. in modelling of propagating steam explosions).

**E3366 Special Topic in Numerical Method on Compressible Flow (0/2):** This is a graduate course that explores the fundamentals of Computational Fluid Dynamics (CFD). The course will present several important topics for application of Navier-Stokes equations in integral form, boundary conditions, entropy condition. Turbulence and its modeling, zero, one and two equation turbulence models. Finite Volume method, convective and diffusive fluxes, Euler backward/forward time integration, flux vector splitting methods. Shock-tube and Riemann problem, Godunov method and approximate Riemann solvers. Higher order reconstruction of flow variables.

**E3673 Electromagnetics in Aerospace (2/0):** This course will introduce fundamental electromagnetic theory, Maxwell's Equations, and electromagnetic waves, instruments and observations on these waves and charged particles related to space radiation, and space plasma environment of the Earth and the Solar System. The relation between space weather and space mission/air flight safety is also discussed.

**T0081 Research Methodology (1/0):** This is a step-by-step course which helps students review the
literature, formulate a research problem, select a method of data collection, establish the validity and reliability of a research instrument, write a research proposal, collect data, process data, and complete a research report.

T0102 Seminar (I) (0/2): This course has a two-hour class every one to two weeks. The class invites senior people from industries, research institutes or universities to give presentations about the developments and future directions in their own fields. We also invite graduates from our department who have rich working experience to give talks about their own working fields and communicate with the students after the talk.

T8000 Thesis (0/0)

Executive Master’s Program

E0800 Composite Material (0/3): Composite materials are now an important category of material, which due to their high specific strength-to-weight ratio as well as high stiffness-to-weight ratio. The composites have been widely used in varies industry. This course covering the fundamental material science and basic characteristic of composite material, manufacture techniques and inspection methods, behavior of unidirectional composites, short fiber composites, analysis of an orthotropic lamina, analysis of laminated composites.

E1728 Flight Safety Analysis (0/3): This is an advanced course on modern civil aviation safety analysis. Materials covered include an introduction of safety, aviation safety theories, human factors (both mental and physical), mechanical or maintenance factors, environmental factors, air traffic management (CNS/ATM), aviation accidents analysis, aviation prevention and etc. In addition to homework and a final exam, each student is required to submit a project report at the end of the semester.

E3523 Flight Physics and Principles (3/0): This course is designed for the basic understanding of flight sciences for both the aeronautical engineers and pilots. Materials cover the four phases of flight sciences, namely, design, manufacture, operation, and maintenance. Topics include history and evolution of flight, standard atmosphere and flight environment, basic aerodynamics, aircraft performance, aircraft stability and control, propulsion system fundamentals, aircraft material and structure, flight safety and quality, and modern aircraft systems.

E3540 Rotary Wing Aircraft Theory (3/0): This is an advanced course of “Introduction to rotary wing aircraft.” Helicopters are highly capable and useful rotating-wing aircraft that have a variety of civilian and military applications. Their usefulness lies in their unique ability to take off and land vertically, to hover and to fly forward, backward, or sideways. This course begins with a technical history of helicopter flight, and then covers basic methods of rotor aerodynamic analysis (Momentum Theory and Blade Element Theory) and related issues associated with helicopter performance and rotor blade design. The blade dynamics and several blade-aerodynamic interactions will be introduced in this advanced course.

E3541 Special Topic on Powerplants (3/0): This course provides information on the operation, components, and systems of aircraft power plants. Four types of jet propulsion engines: the rocket, the ramjet, the pulsejet, and the gas turbine engine which including the turbojet, the turbofan, the turboprop, and the turboshaft will be introduced in the class.

E3543 Unmanned Aircraft Systems (3/0): The course of unmanned aircraft system (UAS) is presented from three aspects: technology, application and regulation. The technology aspect covers not only to the aircraft, but also to all of the supporting systems used in the UAS, including avionic system (sensors, micro controllers, and software), ground station, and communication system. The aircraft discussed in the course includes the fixed-wing aircraft and rotorcraft. Also, their guidance, navigation, and control subsystems are presented. The application aspect discusses how the applications of UAS determine payload and flight envelope of unmanned aircraft. The regulations which confine and certify the UAS are discussed in the regulation aspect.

T8000 Thesis (0/0)
E3652 Aircraft Performance Analysis (3/0): This course prepares students for the study of the fundamental design of airplanes. The airplane will be treated as a point mass and the equations of motion are derived. The only parameters which determine the performance of an airplane are wing loading ($W/S$), lift-to-drag ratio ($L/D$), thrust-to-weight ratio ($T/W$) and the (thrust) specific fuel consumption ($SFC$) of the powerplant. Performances to discuss are descent and glide, cruising which includes range and endurance, climb, turn, take-off, and landing.

E3653 Special Topics on Air Traffic Control (3/0): This course provides an introduction to Air Traffic Control (ATC) and studies the history, development, and structure of the Airspace System; explores navigation aids, ATC radar systems, terminal and en route control, flight service and weather facilities, instrument flight rules. Emphasis will be placed on understanding of the procedures used in radar and non-radar air traffic control and the development of air traffic control system nowadays.

E3687 Aircraft Design (0/3): Aircraft design is a subject rich in its varied applications; therefore, it is important that the students develop a feel for realistically modeling an engineering problem. Consequently, this course is to provide the students a working knowledge of the basic conceptual design of modern flight vehicles. The topics include the design goal selection, review of aerodynamics, aircraft performance, take-off weight, wing loading, wing and fuselage design, selection of engine, landing gear, horizontal and vertical tails, etc.

E3732 Advanced Dynamics of Flight (3/0): This course prepares students for the fundamentals of airplane design. The static stability of the airplane is presented. Assuming the airplane as a rigid body, the equations of motion, which are the basic physics of flight simulation, are derived. Using perturbation methods, the equations are linearized. During the linearization, the aerodynamic stability derivatives are introduced. Since the derivatives are the functions of the aerodynamic and physical properties of the airplane and are important in understanding the motion of the airplane, their physical meanings of the derivatives are discussed. Based on the derived linearized equations of motion, the aerodynamic transfer functions, dynamic responses, handling and flight qualities, and autopilot design are presented.

E3779 Avionics System Design (0/3): This course includes every communication and navigation system, plus the latest spaced-based avionics. The course describes navcom, transponder, VOR, ADF, DME, TACAN, instruments, radar, autopilot, collision avoidance and enhanced ground proximity warning. The course also covers recent systems; Mode S, electronic displays, Free Flight, GPS space and earth segments, laser gyro’s, fiber optics and avionics architectures. This course also introduces the most important concept now affecting avionics; Performance-Based Navigation and Required Navigation Performance.
DOCTORAL PROGRAM IN ROBOTICS

Degrees Offered: Ph.D.

Chairman: Ching-Chang Wong (翁慶昌)

The Program

The Doctoral Program in Robotics was established in 2017. Faculty members are from four departments: Department of Electrical and Computer Engineering, Department of Computer Science and Information Engineering, Department of Electro-Mechanical Engineering, and Department of Architecture. Specialized research areas include: robotics, machine learning, signal processing, pattern recognition, neuro-fuzzy systems, automatic control and power systems, electrical circuit systems, computer engineering, and communication systems. A minimum of 24 credits are required for the Ph.D. degree. A dissertation is required for the Ph.D. degree.

Faculty

Professors
Ching-Chang Wong (翁慶昌); Yang-Han Lee (李揚漢); Chao-Hwa Liu (劉昭華)

Associate Professors
Chi-Yi Tsai (蔡奇謚); Lain-Jinn Hwang (黃連進); Chen-Cheng Chen (陳珍誠);
Ih-Cheng Lai (賴怡成); Peter Liu (劉寅春)

Degree Requirements

Completion of 24 credits of courses. Students are required to pass a qualifying examination in the first two years of being accepted into the Ph.D. program, complete a doctoral dissertation under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

E2463 Robot Control (0/3): The current course introduces the followings: (1) The basic principles of electrical machinery, circuit concepts, magnetic circuits, energy and torque. (2) Introduction of single-phase and three-phase motor system. (3) DC motor system, analysis of steady state and speed control. (4) Simulation and analysis of brushless DC motor system. (5) Motor control, system protection and interference analysis.

E2763 Building Embedded Systems (0/3): This course covers the preliminary background required for embedded systems, including development tools, Linux kernel, boot loader, uC/III real-time kernel, root file system, thread, process, IPC, network services and open source applications.

E3670 Deep Learning (0/3): The purpose of the course is to outline and refine the architecture of the area of deep learning. The course content will be based on an overview of the architecture of the deep learning area, setting up of the environment, and practical examples.

E3724 Patent Analysis for Robotics (3/0): To let students understand what is robotics patents and patent applications and statutory limits. Through the simulation of the course and practical writing to enhance students to understand the importance of the patent obtained and how to protect the key technologies and creatively.

E3725 Design, Cognition and Computation (3/0): By examining and reviewing a set of related theories (media, cognition and computation) and their relation to design, we envision a new wave of design for the digital era. The objective of this seminar is to introduce different types of important design studies conducted from the 70s to date and to examine the methodology necessary to address these design studies. To do so, the seminar is divided into two modules. They are 1) the primary theoretical approaches; 2) the theoretical practice and proposal writing.
E3726 Robotic Fabrication in Architecture (3/0): Simple applications of robotic fabrication include setting-up, 3D printing and processing. This course focuses on the discussions and implementations of robotics, through parametric design, digital fabrication to robotic fabrication. It'll help students understand the fundamentals of robotics, as well as geometric transformation and process integration.


E3733 Special Subject Study (I) (2/0): The purpose of the course is to let students integrate knowledge learned from different courses to perform practical applications and researches in robotics. Two forms of projects can be selected, make-oriented group project and academic individual research project.

E3734 SPECIAL SUBJECT STUDY (II) (0/2): The purpose of the course is to let students integrate knowledge learned from different courses to perform practical applications and researches in robotics. Two forms of projects can be selected, make-oriented group project and academic individual research project.

E3740 Special Subject Study (III) (2/0): The purpose of the course is to let students integrate knowledge learned from different courses to perform practical applications and researches in robotics. Two forms of projects can be selected, make-oriented group project and academic individual research project.

E3811 Reinforcement Learning (3/0): The purpose of the course is to outline and refine the architecture of the area of reinforcement learning. The course content will be based on an overview of the architecture of the reinforcement learning area, setting up of the environment, and practical examples.

E3813 Application and Implementation of Motor (3/0): The current course introduces the followings: (1) The basic principles of electrical machinery, circuit concepts, magnetic circuit concepts, power, energy, and torque, (2) Single-phase and three-phase motor system introduction, (3) DC motor system, steady-state analysis, and speed control method, (4) Simulation and Analysis of Brushless DC Motor System, (5) Motor control, protection system, and interference analysis.

T8000 Thesis (0)
THE CENTER FOR INTERNET OF THINGS AND BIG DATA (CIOTBD)

Director: Chih-yung Chang (張志勇)

IOT (Internet of thing) and Big Data are the two emerging technologies which will have a great impact on the future. The Internet of Things (IoT) is essentially a network of physical objects that is connected to and accessed through the internet. Big data is enabling organizations to collect and analyze data in new ways, helping to improve qualities of businesses, industry, government services and people’s lives. IOT and Big Data have close relationship with each other. The IoT will massively increase the amount of data available for analysis. The information obtained through big data analytics can provide businesses with insights that enable them to make smarter and faster business decisions.

The Center for Internet of Things and Big Data (CIOTBD) aims to enhance collaboration at various levels with domestic or foreign universities, research institutes, and ICT related companies in the development of IoT and Big Data technologies. CIOTBD also expects to conduct forward-looking research with industrial partners through joint projects and actively investigates, develops, and promotes innovative, exploratory and pioneering IoT and Big Data technologies.

UNMANNED AERIAL VEHICLE RESEARCH CENTER

Director: Jing-Min Tang (湯敬民)

The UAV Research Center was started in 2016 and is focused on the applying the principles of systems engineering to make unmanned vehicles more reliable, safe and efficient in the growing field of civil and commercial unmanned vehicle systems markets. Traditionally, unmanned aerial vehicles are used strictly for military benefits. In recent years, the commercial uses and demand for unmanned aerial vehicles has greatly increased. One of the main purposes of an unmanned aerial vehicle is to collect valuable information via remote sensing technologies for a variety of commercial industries. They may also be used to deliver messages, medicines, packages or products.

The mission of UAV Research Center is to help those who will develop and use the unmanned vehicle systems of the future.

ENERGY AND OPTOELECTRONIC MATERIALS RESEARCH CENTER

Director: Trong-Ming Don (董崇民)

The Energy and Optoelectronic Materials Research Center is staffed by specialists in chemical engineering and materials engineering. The scopes of the Center’s researches include the simulation and design of chemical and energy systems, improvement of the energy utilization for production processes, development and design of renewable energy application processes, material property/performance measuring, technology development for the synthesis and preparation of optoelectronic materials, development of production processes for optoelectronic applications.

WATER TREATMENT SCIENCE AND TECHNOLOGY RESEARCH CENTER

Director: Lin, Cheng-lan (林正嵐)

The goal of the Water Treatment Science and Technology Research Center (WTST) is to pursue scientific innovations for water treatment-related science and technologies. WTST aims to establish a cooperation platform between colleges and enterprises to provide solutions for water treatment problems. The scope of research includes, but is not limited to, seawater desalination, water purification, industrial wastewater treatments and water recycling.
COLLEGE OF
BUSINESS AND MANAGEMENT
COLLEGE OF BUSINESS AND MANAGEMENT

Dean: Tzong-Ru Tsai (蔡宗儒)

Brief History

Over the past 30 years, the College of Management and the College of Business have built up a good reputation through hard working alumni in different walks of life. An amalgamation of the originally separate colleges, the College of Business and Management was established in 2012. Currently, it consists of twelve departments, four English programs and three research centers. The twelve departments are International Business, Banking and Finance, Risk Management and Insurance, Industrial Economics, Economics, Business Administration, Accounting, Statistics, Information Management, Transportation Management, Public Administration, and Management Sciences. The four English programs are Bachelor’s Program in International Business, Bachelor’s program in Global Financial Management, Master’s Program in Business and Management and TKU-QUT Master Degree Program in Finance. The three degree programs have been added, respectively, Doctoral Program in Finance Industry and Business Management, Master’s Program in Digital Business and Economics and Master’s Program in Program in Big Data Analytics and Business Intelligence. The three research centers are the Cross-Strait Financial Research Center, Statistical Survey Research Center and Center for Information Technology Usage Behavior Research. In addition, it also offers a pioneering Executive EMBA program. The TKU College of Business and Management is now the largest business college in Taiwan, with more than 9,028 students and 187 full-time faculty members.

The main objective of the College of Business and Management is to cultivate talented, high quality business and management professionals, both at undergraduate and graduate levels, who may go on to contribute to Taiwanese society, which has experienced more than 50 years of high economic growth and diversified industrial development. The College has partnership agreements with the University of Michigan-Flint, IAE Lyon-Université Jean Moulin Lyon 3 and the University of Queensland for dual-master degree programs, which enable students to obtain master’s degrees from two universities upon completion of their studies. Furthermore, the “International Journal of Information and Management Sciences,” an EI indexed journal, is published by the College and is an indication of its academic excellence.

The College of Business and Management is guided by TKU’s Triple Objectives of Education, which include globalization, future-oriented and information-orientation education. The college has actively held joint academic conferences and short-term overseas study programs with TKU’s partner universities around the world for decades. The college is committed to establishing practical courses and special lecture programs by inviting key business executives as speakers throughout the year; hence, substantially enriching students’ knowledge and experience beyond the textbooks. Computer and Internet facilities are available to students for homework and practice tasks. Academic journals are published by the majority of departments to encourage faculty members to present their research results. The exchange visits and joint seminars held by the college and its cross-strait partner universities are among the most special events held by any of TKU’s eight colleges.

College Mission

The College has the following mission - to provide an ideal learning environment, balancing theory and application, so as to elevate the competitive edge of each student, thus satisfying the growing needs of business. Implicit in this is a promise to cultivate professionals having excellent managerial skills, and who are thoroughly empowered with strong ethics, responsible attitudes, humanitarian accomplishments, and global visions.

Future Development

Going forward, the College of Business and Management seeks (1) To provide the research and teaching services of each department so as to meet future demands; (2) To recruit teachers with Ph.D. degrees and outstanding research ability so as to promote the quality of teaching and research; (3) To facilitate an exchange of ideas on teaching methods across each department so as to integrate various disciplines; (4) To work on cooperative projects with other universities and industries in order to integrate theory with practice; (5) To promote international academic exchange, a more extensive
English curriculum, and the Junior Year Abroad program to cultivate students’ international perspective; (6) To sign academic cooperation agreements offering dual Master degree programs, and (7) To equip students with professional knowledge and skills by providing a practical-oriented curriculum.

Course Descriptions

Undergraduate Courses

B0347 Banking Practices (2/0): Banking has been playing a crucial role in the development of Taiwan’s financial environment. In addition, it also provides an opportunity for students interested in banking to develop their careers after graduation. Since the major source of bank’s income comes from interest revenue, the contents of the revenue and practical studies of cases will also be the main focus of this course.

B0408 Futures Studies in Economics (0/3): This course explores trends and emerging issues in the field of global economy, and provides students with an understanding of emerging contemporary topics. It focuses on issues of globalization, knowledge based economy, innovation and industrial change.

B1186 Theory Seminar of Business Management (2/0): In this course, approximately 12 CEOs will be invited to deliver lectures. Through their speeches, students will learn practical aspects of business management from the extensive experience of industry CEOs and business leaders. The speakers come from leading companies in various industries, including finance & insurance, telecommunications, electronics, health care, and government sectors.

B1395 Personal Risk Management (3/0): This course is designed for non-insurance majors. The topics of this course include basic concepts of risk, the risk management process, life coverage, health and accident insurance, and strategies for acquiring insurance to cover personal risk.

B1474 Economic Ethics (0/2): This course is jointly taught by 8 professors from the College of Business. Topics consist of the concepts of happiness developed by ancient Greek philosophy, economic ethics evolved since the 19th century British enlightenment age as well as an introduction to Adam Smith’s famous writings. Three separated parts of economic sectors are noted following the introduction session, namely household, business firms and government, focusing on the contemporary ethics issues within the related sections of the economy.

B1559 Seminar in Financial Market Practices (2/0): In this course, we will invite financial experts or entrepreneurs to make a speech or share their experience. By these, we will let students be familiar with the situation and prospect of industries and know how to apply their knowledge in practice.

B1560 Seminar in Financial Market Trends (0/2): In this course, we will invite financial experts or entrepreneurs to make a speech or share their experience. By these, we will let students be familiar with the situation and prospect of industries and know how to apply their knowledge in practice.

B1688 Case Study of International Trade (2/0): The course will explain international trade in terms of, for example, how to promote it, the calculation of freight, and signed contracts and letters of understanding.

M0074 Business Risk Management (0/2): The purpose of this course is to carefully examine one important type of risk, called pure risks. Once certain fundamental ideas have been presented, the instructor will explain in detail the need for, and the application of, various tools of risk management, first by a business firm and second by a family.

M0486 Urban Transportation Fundamentals (0/2): Course content includes an introduction to the development, scope and other concepts related to urban transportation management. In a diverse transportation management environment, it is essential to learn how to establish a system of management methods to complete specific goals.

M1741 Overview of Rapid Transit System Engineering (0/3): This is an introduction to the Rapid

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Transit System. This course presents the basics of transportation systems, urban transit problems and solutions. Electrical/mechanical systems of mass rapid transit, automatic guided systems, medium capacity transit, planning, design, construction, and operation and maintenance issues are discussed.

M2060 Innovation and Entrepreneurship Management (0/2): Based on nearly twenty years of experience in business marketing, we also take further steps to analyze the most recent business marketing approach. All the topics for discussion throughout the course are listed below. First, we show people how to search for different types of business administration. Second, we provide a method of shared problem solving in which all members of a group spontaneously contribute ideas, or a similar process which we call “brainstorming.”

M2204 Comprehensive Financial Management Planning (0/2): To learn how to evaluate the financial goals of individual investors based on a sound financial management philosophy and to help them in proposing a comprehensive financial plan; the course will offer you practical knowledge with solid practice.

M2213 Practical Training (0/6): Practice and training.

M2218 Interpersonal Relationship & Communication (3/0): The purpose of this course is to show how you can become more effective in your work and personal life through knowledge of and skills in human relations.

M2238 Social Service (I) (1/0): This course cooperates with Cite Culture & Art Foundation and Taiwan Fund for Children and Families to provide our students the opportunity to enhance the reading ability of primary school students who are underprivileged. This course provides students the ethical thinking and the fulfillment of social responsibility.

M2239 Social Service (II) (0/1): This course is the extension of SOCIAL SERVICE (I). Like SOCIAL SERVICE (I), this course cooperates with Cite Culture & Art Foundation and Taiwan Fund for Children and Families to provide our students the opportunity to enhance the reading ability of primary school students who are underprivileged. In addition, students will participate in the Volunteer Club of KPMG CPA firm to learn how the CPA firm fulfils its corporate social responsibility.

M2312 Marketing and Life (2/0): This lesson comes from the relationship of life experience and marketing knowledge. Our principle is to motivate students’ interests toward marketing management. In order to achieve that, chapters include many famous cases or something that has happened in our life, and we will teach lots of interesting practices or phenomenon.

M2382 Managed Futures (3/0): In recent years, the global funds have shown a strong interest in the investment tool of the management futures fund. As the scale of CTA (Managed Futures) is expanding rapidly, the role and influence of the CTA fund in the global futures and options market is becoming increasingly apparent. In response to this trend, this course is mainly to cultivate future professional asset management personnel, from investment analysis, derivative financial commodity introduction, program trading applications, managed futures and ETF to guide people to further understand the futures asset management.

M2384 Management Practices Analyses (3/0): The theoretical explanation and management case analysis of basic management combined with the application of theory and practice.

T0086 Technology Management (2/0): This course examines issues of management related to technology. It includes four major parts: the discussion of technology, possession and application of technology, prediction and planning of technology, and evaluation of performance and ethics.

Master’s Program

B1005 Managing Pension Plans (0/3): This course introduces the pension schemes, and corresponding pension fund management. Students can learn retirement plans and pension fund management from this course.

B1405 Special Topics on International Finance (0/3): This course exposes students to a wide range
of concepts, issues and practices in international finance. It has a practical orientation and teaching is based on case studies analyzed in teams. Topics covered include international valuation and exchange risk management issues, as well as international portfolio investment, comparative financial markets and long-term risk exposure.

**B1521 Seminar in Industrial Economics Practice (I) (2/0):** The purpose of this course is to enhance the students’ ability to understand the theories of industrial economics in practice. By inviting the experts in industrial practices outside the university to the class, the speeches and discussions introduce the students to a variety of problems dealing with industrial economics in the real world.

**B1524 Seminar on Industrial Economics Practice (II) (0/2):** The purpose of this course is to enhance the students’ ability to understand the theories of industrial economics in practice. By inviting the experts in industrial practices outside the university to the class, the speeches and discussions introduce the students a variety of problems dealing with industrial economics in the real world.

**B1710 Practice of Asset Management (0/3):** This course focuses on training students to be experts in asset management and will invite the financial practitioners. We believe that the course will help students know the operation of a realized market and apply their ability in future working career.

**B1717 Global Financial Investment Theories and Practice (0/3):** Apply theory to actual Investment actions to get earnings.

**E1111 Algorithms (3/0):** This course begins with the fundamental concept of the algorithm. After student are familiar with basic algorithm matters, we will discuss AI specific algorithms.

**E2751 Secure Electronic Commerce (0/3):** The objective of this course is to study the issues surrounding E-commerce security, including E-commerce security frameworks, digital certificates, transaction security, secure mobile commerce, e-commerce regulations, and OWASP TOP 10 issues. By introducing and discussing these topics, reading research articles, and inviting speeches from experts, students will learn how to establish E-commerce security models.

**M0800 Business Ethics (1/0):** The current course introduces the ethical relationships between the business and the society and helps students understand the multi ethical obligations of businesses toward stakeholders inclusive of employees, stockholders, competitors, community, and the environment.

**M0853 Electronic Commerce (0/3):** This course will lecture based on cases. Certain international e-commerce cases will be introduced. Moreover, several issues will also be covered such as online retailing, pricing, branding, marketing, social media, and innovative business model. The goal of this course is to synthesize the key factors of those cases and provide an overview concept of e-commerce.

**M1719 Practical Training of Information Security Equipment (2/0):** This is a practical course using a virtual lab developed by us to provide each student an independent environment to practice various topics of network security management.

**M1892 The Issue of Information Security Management (0/2):** Students learn about the common hacker attacks techniques and the basics of defense, the establishment of website pages attacks, exploits, packet filtering and monitoring the concept to cope with future employment, work-related information, to enhance flexibility in the use of knowledge self-worth.

**M2087 Seminar on Information Security (0/2):** In this course students learn the fundamental theories and essential principles of information security management through reading academic journal articles. Students also can learn how security management technologies work in business.

**M2294 Financial Practicum (2/0):** The students who take this course must take practical training for eighty hours in a financial organization including investment and broker agent companies. The students may select an office work or field work unit for their practice. The items of practice are subject to the arrangements by the units of practice. The semester scholastic records of the students are graded by both the practical unit manager and the teacher on a fifty-fifty basis.
M2385 Business Intelligence Analysis (2/0): This course will use Excel massive data processing and analysis, Excel statistics and charts analysis, Excel database automation management, Excel Data Mining and meta-analysis to help students understand how the large amounts of data generated by daily operations and various analyses, and then transform them into vital intelligence and information to assist in the development of relevant business decisions to produce an excellent operating performance.

M2420 Asset Management by Big Data and Algorithms (3/0): The topics of this course include programming language applications, algorithms, investment financial practice applications, marketing practice applications, etc. It is recommended that students who take this course to hold the basic skill of R language.

EMBA Master’s Program

M0800 Business Ethics (3/0): The course aims at presenting the conceptual context of social responsibilities and business ethics. Through case studies, the students are expected to develop a sense of professional ethical conduct and criteria in the professional judgments. The students are also expected to behave ethically in their future business acts, so as to help their businesses or organizations act as a good “corporate citizen.”

M2074 Leadership and Teamwork (3/0): The current course introduces the theories and practices of leadership and team building to help students apply what they learned from the course for work or future studies.

T0081 Research Methodology (3/0): The purpose of this course is to introduce first-year EMBA students to information systems research and issues. Specific topics contain fundamental concepts in research, types of research methods and its design, research measurement and statistical analysis, and research publication.

Ph.D. Program

M0800 Business Ethics (1/0): Managers and researchers have turned their attention to business ethics because of recent corporate scandals. Some sense of ethical behavior is needed as well. In this course, we will investigate some of the ethical issues facing businesses including acceptable risk, intellectual property, worker’s rights, and ethical issues in marketing. Students will come to realize the various bases from traditional philosophical and theological sources for ethical practices.
DEPARTMENT OF INTERNATIONAL BUSINESS

Degrees Offered: B.B., M.B.A. E.M.B.A

Chairman: Chia-Chi Sun (孫嘉祈)

The Department

The Department of International Business was established in 1963 in order to adapt to the nation’s economic development and cultivate students with specialized knowledge in commercial affairs in general and in international commercial affairs in particular. In the early stage, classes were only taught in the evenings. In 1965, the Department was restructured and it started to offer classes in both daytime and evening divisions. In 1982, the Department was expanded and three classes were added to both its daytime and evening divisions. Courses offered at the time covered theories, policies, and practices related to economics, marketing, finance, and foreign trade.

In the 1990s, due to the economic changes experienced worldwide, domestic enterprises were becoming more and more globally involved and seeking foreign subsidiaries and branches. To cope with the need at the time, the Department began to add courses related to international business management and international investment to its undergraduate curriculum.

The graduate program of international business was established in 1992. It offers a Master of Business Administration (MBA) degree aimed at training middle to high-level managers of multinational enterprises. It provides intensive and specialized education and research facilities in the following four areas: international business management, international marketing, international financial management and planning, and international investment decision making. These and other relevant courses are designed to correlate with the current trend of internationalization.

In the 1997-1998 academic year, the graduate program was divided into two subprograms, namely, the International Business Program, and the International Economics, Investment, and Trade Law Program. In the same academic year, the undergraduate program changed. It no longer accepted students into the evening division, and instead, the program enrolled four classes of regular daytime students.

In the 2000-2001 academic year, the undergraduate program established an extension program that took enrollment from one class of high-school graduates who had left school for at least one year. Therefore, the four classes of regular students were reduced to the current three. In the meantime, the graduate program began to accept enrollment from a class of college graduates who had already been in the workforce for more than three years.

In the 2002-2003 academic year, with an aim to carry out the Ministry of Education’s policy of lifelong study in higher education, the Department set up a new graduate program offering the degree of Executive Master of Business Administration in International Commercial Sciences (IMBA). The IMBA program trains high-level managers for positions in multinational enterprises, and provides education and research in international marketing, international financial management, international insurance, and international economics. Required courses are lectured mainly in English, while optional ones are taken abroad in an intensive course fashion. Thanks to the joint efforts of high-ranking managers and the faculty of the College of Business, this program strives to make business decisions, grasp the current multinational investment environment, and explore and solve problems related to multinational business.

In the 2003-2004 academic year, to promote the internationalization policy of the university and highlight the special features of its development, the Department set up the Undergraduate English Instruction Program. All the courses of the program are instructed in English, except for the general courses. The major courses of the first two years of study focus on the fundamental theories related to international business. The Junior Year Abroad Program emphasizes international marketing, international business management, international financial management, and international economics. The fourth year curriculum highlights the features of the development of the Department in the nation. In accordance with local trends and changes to the global business world, in 2010 the department changed its name to the Department of International Business.

In the 2012-2013 academic year, the IMBA program was changed to Executive Master’s Program of Business Administration (EMBA) in International Marketing due to the expansion need for professional experts in International Marketing.

Faculty
Professors
Lin, Yi-nan (林宜男); Lin, Jyh-horng (林志鴻); Tsai, Jeng-yan (蔡政言)

Associate Professors
Chang, Chun-hui (張俊惠); Lai, Chin-chang (賴錦璋); Lin, Chiang-feng (林江峰);
Liu, Chu-mei (劉菊梅); Tseng, Yi-ming (曾義明); Pao, Shih-heng (鮑世亨);
Hsieh, Chih-jou (謝志柔); Liu, Yi-cheng (劉一成); Sun, Chia-Chi (孫嘉祈);
Tseng, Chun-hui (曾忠蕙)

Assistant Professors
Chang, Sheng-hsiung (張勝雄); Ho, I-fang (何怡芳); Lin, Mei-rong (林美榕)

Lecturers
Chan, Shiou-jung (詹秀蓉);

Degree Requirements
This department offers two programs at the undergraduate level (Bachelor in Business) and three programs at the graduate level (Master’s in Business). The different degree requirements are as follows:

1. Requirements for the degree Bachelor in International Business:
Completion of 128 credits, including 84 credits of required courses and 22 credits of elective courses offered by the department and 22 credits by others.

2. Requirements for the degree English Instructed Bachelor in International Business:
Completion of 128 credits, including 78 credits of required courses and 27 credits of elective courses offered by the department and 23 credits by others. (All the courses are lectured in English.)

3. Requirements for a Master’s degree in Business Administration (MBA):
Completion of 39 credits, including 10 credits of required courses and 29 credits of elective courses offered by the institute. Students are also required to submit a written thesis completed under the supervision of a faculty member and to pass an oral examination.

4. Requirements for an Executive Master’s degree in Business Administration (EMBA):
Completion of 36 credits, including 9 credits of required courses and 27 credits of elective courses offered by the institute. Students are also required to submit a written thesis completed under the supervision of a faculty member and pass an oral examination.

5. Requirements for an Executive Master’s degree of Business Administration in International Marketing (EMBA):
Completion of 36 credits, including 9 credits of required courses and 27 credits of elective courses offered by the institute. Students are also required to submit a written thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

A0529 English Conversation (2/2): This course is designed to improve students’ ability to speak English in real-life situations. Subjects will be wide-ranging and topical in order to ensure that students develop the ability and confidence to engage in true discussion.

A0582 Business English Conversation (2/0): This course is designed to develop students’ skills of English listening, speaking, reading and writing in a variety of business situations. It focuses on day-to-day communication needs such as conversing by phone, socializing, and negotiating.

A0945 Japanese Conversation (2/0): This course aims to improve students’ skills in listening,
speaking, reading and writing Japanese. The topics taught include general lifestyle, culture, business activities, etiquette, etc.

**B0033 Essentials of Civil Law (2/0):** This course focuses on the basic legal structure of civil affairs. Topics include, but are not limited to, laws governing contracts, lease agreements, mortgages, marriages, and family.

**M0142 Marketing Management (3/0):** This is an introductory course, teaching the roles of marketing, marketing ethics, consumer behavior, selection of market, and strategies on product, pricing, distribution, and promotion.

**B0071 Investments (0/3):** This course provides students with a general understanding of investments. The course covers topics as fundamentals of investments, equity securities, bonds, derivatives.

**B0109 Insurance (0/3):** This course summarizes the pervasive nature of pure risk on the individual and illustrates the way in which insurance can be used to deal with the problems posed by such risk.

**B0130 Microeconomics (3/0):** This course focuses on analytical skills for microeconomic problems. Topics include consumer theory, theory of the firm, market structure, and elementary welfare economics.

**B0173 Commercial Law (0/2):** This course presents a survey of laws governing various forms of corporate organizations, and laws governing commercial papers, including promissory notes, bills of exchange, and checks.

**B0191 International Business Management (0/3):** This is a two-semester course teaching introductory material in general management, including marketing, financial management, production, and human resources in the first semester, and focusing on relevant topics in the context of international business in the second.

**B0198 International Marketing (3/0):** This course focuses on the international aspects of marketing. Topics include analysis of environment, analysis of competitions, strategies of pricing, product development, and promotion.

**B0202 International Finance (2/2):** This course focuses on the international aspects of the financial world. Topics include the foreign exchange market, historical evaluations of international financial systems, mechanics of hedging exchange rate risks, theory of balance of payments, theory of exchange rate determination, and open economy macroeconomics.

**B0206 International Financial Management (0/3):** This course provides an introduction to financial management and international aspects of financial management with special emphasis on risk hedging.

**B0213 Laws on International Trade (3/0):** This course offers an introduction to the making of trade laws in Taiwan, international customized rules of trade, and trade laws of major trading partners.

**B0219 International Trade Theory and Policy (2/2):** This course teaches basic concepts of comparative advantages, theory of tariffs and non-tariff trade obstacles, economic integrations, and recent developments in international economic environments.

**B0221 International Trade Affairs (2/2):** This course covers practical matters relevant to international trade, including materials concerning communication, pricing, contracting, shipping, commodity and exporting insurance, payment processes, and various laws and/or customized rules governing international trade.

**B0236 International Economics (3/0):** This course consists of two equally important topics: international trade theory and international finance. International trade theory aims at exploring the principle of international specialization and policies involved with it. The international finance part leads to the understanding of the operations of international monetary system.

**S0325 Calculus (2/2):** Mathematics is unquestionably the single most important tool of the modern
economist. In this course, we will pay more attention to the development of the ideas of limits and continuity, moving then to the calculus of functions of one variable, multivariate calculus, and finally dynamics. We believe an understanding of the mathematical concepts is required if a student is to develop the ability and confidence to tackle problems in economic analysis.

B0302 Economics (2/2): This is an introductory course that teaches basic knowledge in various areas of economics and provides a broad understanding of economic affairs.

B0310 Data Analysis (3/0): In this course, we provide a simple explanation of basic statistics. We then help students collate financial data and introduce the financial model using excel software.

B0373 Macroeconomics (0/3): This course focuses on macroeconomic structure and interactive behavior among agents. Topics include the basic structure of macroeconomics, expectation formations, effectiveness of government policy, and fundamental growth theory.

B0395 Business English (2/0): This course teaches techniques related to business letter writing. Topics include inquiries, replies and quotations, import and export procedure, sales contracts, orders, complaints and adjustments, and letters of credit in foreign trade.

B0489 International Business Policy (3/0): This course provides an integration of materials taught in the courses General Management, Marketing, Financial Management, and Investment Decision Making in International Business.

B0741 Financial English (3/0): This course guides students step by step through the world of finance, giving students the essential language and terminology needed to succeed. Six main topics are covered: financial markets and instruments, accounting basics, money and banking, trade and commerce, corporate finance, and economic issues.

B0743 Business Report Writing (0/2): This course is designed for students who need to be able to read, interpret and write everything from short memos to longer reports in English. It also encourages students to become progressively more aware of what makes an effective piece of written communication in English. Throughout the course, guided writing tasks and language focus topics are integrated, with an aim to building students’ confidence in expressing themselves with grammatical accuracy in logically constructed reports.

M0800 Business Ethics (3/0): This course provides students with essential knowledge on ethical behavior in today’s business world. To build students’ sense of responsibility and deter corporate fraud, this course covers several major topics such as: stakeholder relationships, corporate governance, and corporate social responsibility.

M0518 Accounting (2/2): This course introduces the basics of accounting, including financial statements and the related items in them. Student are expected to read and explain the items and numbers in the financial statements as the bases for decision making.

B0807 Introduction of International Financial Instruments (2/0): This course will introduce the basic theory of investment and some international financial instrumentals, including stock, foreign exchange, mutual funds, futures contract and exchange traded funds (ETF).

B0838 Economics of Money, Banking, and Financial Markets (0/2): This course will develop an integrative economic framework to organize students’ thinking about financial markets and institutions so that students can have a better understanding of our financial system and learn to apply it to current developments.

B0841 Taiwanese Investment in Mainland China (3/0): The main purpose of this course is to develop a Cross-Strait economic competition paradigm which is one of the important issues for politicians and businessmen in Taiwan. How to adjust the investment and management strategies to gain vantage from the “competition-cooperation” model for Taiwan’s corporations is a crucial and urgent mission. This course comprises three sections: the history of China’s economic reform, an enterprise case study, and globalization and Cross-Strait economic relations.
**B0927 International Business Communication in English (0/2):** This course aims to build students' confidence in expressing themselves correctly and fluently in English, and enable them to become effective communicators in their future business careers. It focuses on business communication needs in the workplace such as entertaining visitors, meetings and discussions, presenting facts and figures, and job interviews.

**B0994 World Trade Organization (0/2):** The WTO is an organization for liberalizing trade, and provides the following three main functions: (1) a forum for governments to negotiate trade agreements, (2) a place for them to settle trade disputes, and (3) an organization to operate a system of trade rules. At its heart are the WTO agreements, negotiated and signed by the bulk of the world’s trading nations. These documents provide the legal ground-rules for international commerce. They are essentially contracts, binding governments to keep their trade policies within agreed limits.

**B1002 Financial Markets, Institutions, and Investments (2/0):** This course is suitable for undergraduate students. It enhances students’ comprehension level in international financial markets and institutions, provides a conceptual framework that can be used to understand why different financial markets exist and what types of services financial institutions offer. Each type of financial market is described, with a focus on the securities that are traded in that market and the participation by financial institutions.

**B1158 Applied Economics Analysis (3/0):** This course provides a simple review of statistics and economics. It introduces how to collect macro and micro economic data, and through this process of data collection, how to make optimal investment decisions.

**B1179 Tourism Japanese (0/2):** This course guides students in learning practical Japanese conversation geared to the area of travel. It introduces basic sentence structures and vocabulary to help students navigate their way around travel dialogue in Japanese.

**B1253 Service Marketing & Management (3/0):** Service marketing is a form of marketing which focuses on selling services. Services can be difficult to sell and approaches for marketing services are therefore vastly different from that of traditional products. Some companies approach service marketing with a combination of both products and services. For example, a store which sells computers also tends to offer services such as helping people select computers and providing computer repair. Such a store must market both its products and supporting services to truly appeal to customers.

**B1255 Global Advertising Management (0/2):** Global advertising management is a senior undergraduate course that focuses on how to identify global advertising issues, how to conduct an advertising campaign, when to create the right media exposure, and how to examine advertising effectiveness. In fact, advertising is part inspiration and part hard work. It requires not only a knowledge of how successful global advertising strategies are formulated, but also practical participation in this process of formulation.

**B1391 International Business Management Practice (3/0):** The course introduces famous MNE cases and practices, and also discusses the practical applications of business knowledge.

**B1397 Money and the Financial Systems (3/0):** Economists study how people make decisions and interact with one another, but they also analyze forces and trends that affect the economy as a whole.

**B1456 Analysis of Current Trends in International Politics (0/2):** This course provides knowledge, including history, current issues and political development, on the world’s primary nations, geographic areas and international organizations, and introduces analytical theories so as to better understand the nature of international politics.

**B1457 International Journalistic English (0/2):** The articles covered in this course relate to issues in the fields of politics, economics, society, culture, entertainment, and environment. Students will learn frequently-used vocabulary and important techniques in the thematic development of an English news article, thus enabling students to read on their own.

**M0086 Business Essentials (3/0):** This course helps beginning business students to understand how business, government, and citizens together influence the way that business is conducted in different
societies and the types of environment in which business prospers.

**M0090 Management (3/0):** This course aims to introduce basic concepts on management, including environmental analysis, planning, organization, and controlling, and so on. In addition, several integrated topics are introduced, including international management and entrepreneurship.

**M0142 Marketing Management (2/0):** This course was designed to introduce basic concepts of marketing management, including “product, price, place, promotion, and planning” of international marketing activities. Students should also learn and apply the basic concepts above with practical case studies from this course.

**M0271 Financial Management (3/0):** Financial Management is a building block to students in the field of finance. The topics taught expose students to fundamental concepts such as financial markets and institutions, risk and rates of return, interest rates, and analysis of financial statements.

**M0394 Management Accounting (0/3):** This course deals with the provisions and use of accounting information to managers within organizations and to provide them with the basis to make informed business decisions that will allow them to become better equipped in their management and control functions.

**M0517 Statistics (2/2):** The purpose of this course is to give students a conceptual introduction to the field of business statistics and its many applications; therefore, applications of data analysis and statistical methodology are an integral part of the course. That is, the emphasis of the course is on helping students understand the wide range of statistical applications in business and finance.

**M1104 Supply Chain Management (3/0):** This course provides a comprehensive overview of supply management and global logistics. The course addresses global dimensions of supply chains, supply chain performance measurement and financial analysis, supply chain technology, transportation management, inventory decision making, warehousing decisions, network design and facility location, procurement and operations. Cases selected from various industries are also introduced in class.

**M1775 Innovation Management (0/2):** This course aims to equip students with an understanding of the main issues in innovation management, an awareness of the key features of success, and an appreciation of the relevant skills needed to manage innovation at both strategic and operational levels. It provides evidence of different approaches based on real-world examples and experiences of leading international firms.

**T0086 Technology Management (3/0):** This course focuses on the strategic management of technology and innovation in the business environment in both new and long-established firms. The conceptual framework of this course is an evolutionary process perspective on technology strategy and innovation. It draws on strategic management, economics, and organization theory as tools for addressing important challenges faced by managers in firms where technology is changing. This technology may take the form of information, products, processes and/or administrative procedures.

**B0825 Market Survey and Applied Statistics (0/3):** This course communicates the essence of marketing research to undergraduate-level students. The aim is to help them to know when marketing research can and should be used, what research alternatives exist, how to recognize effective and ineffective research, and how to interpret and apply the results.

**B1550 Trade Show and Event Marketing (0/2):** This course is to introduce the content and strategies of event marketing, including three Es and five Ps. Event marketing is about marketing management of conventions, expositions, seminars, celebrations, anniversaries, receptions, political rallies, training programs, etc. Three Es of event marketing are entertainment, excitement, and enterprise. Five Ps of event marketing are product, price, place, public relations, and positioning. This course will also arrange several practical assignments to help students experience and learn the skill of event marketing more.

**Master’s Program**

**B0196 International Marketing Management (3/0):** Course topics include international market
environment, the effect of culture on marketing strategy, the segmentation of international markets and competitive analysis, marketing mix decision—product, price, place, promotion—and the planning and control of international marketing activities.

B0206 International Financial Management (0/3): Topics of this course include the multinational aspects of financial management, the balance of payments and international economic linkages, parity conditions in international finance and exchange rate forecasting, short-term financing, asset management, international portfolio investment, corporate strategy and foreign direct investment, capital budgeting for the multinational corporation, the cost of capital for foreign investment, and the measurement and management of political risks.

B1039 Corporate Governance (3/0): Corporate governance has been emerging since the early 1970’s in response to the perceived lack of effective oversight that contributed to the poor performance problems in many corporations. Inadequate corporate governance has been identified as a major reason resulting in the Asian financial crises. The impact arising from Enron and Corporate America has now put the issue under a spotlight. The issue of corporate governance is currently creating widespread discussion in Taiwan.

B0814 International Strategy Management (0/3): This course focuses on how to design and implement an effective firm strategy. The foundations of theories we introduce in this course are drawn from two distinct bodies of research: the resource-based view of the firm, and organizational economics. In addition, the view of strategies presented here is analytical. If strategic management is all about managing to achieve outstanding success, then the essential tasks of strategy are to identify the sources of superior business performance and to formulate and implement a strategy that exploits these sources of superior performance.

B1392 International Supply Chain Management (0/3): This course presents the basic concepts and principles of Global Supply Chain Management. Students will learn the dimensions of global supply chain management, including product and material flows, information flows, and financial flows.

T0081 Research Methodology (3/0): The purpose of this course is to teach students how to write a master thesis or a research paper with correct formatting, including the methodology used, data collected, and thesis structured.

M0144 Seminar in Marketing Management (3/0): The primary objective is to enable students to understand how to make important marketing decisions which they will face in middle-management positions. In addition, this course will put an emphasis on the application of marketing concepts, tools, and decision-making processes.

M0272 Seminar in Financial Management (0/3): This course introduces the concepts and tools used in finance and international finance. Case studies and papers are used to realize the application of these financial concepts and tools.

M2074 Leadership and Teamwork (3/0): This course introduces the theories and practice of leadership and team building to help students apply what they learned from the course for work or future studies.

M0800 Business Ethics (3/0): The goal of this course is to discuss and help students understand how an enterprise can be regarded as a corporate citizenship.
DEPARTMENT OF BANKING AND FINANCE

Degrees Offered: B.B.A. E.M.B.A., M.B., Ph.D.

Chairman: Yu-lung Chen (陳玉瓏)

The Department

The Department of Banking and Finance was established in 1965 as a section of the Department of Banking and Insurance. In 1974, the Department of Banking and Insurance was divided into two departments, the Department of Banking Management and the Department of Insurance. In 1988, the name of the Department was changed to the present one.

The Department of Banking and Finance offers a Bachelor of Business degree. Students are required to take 96 required credits and 42 elective credits in order to qualify for graduation. The objective of the program is to improve students’ decision-making ability as bank managers, portfolio managers and financial managers.

Our Master’s Program of Money, Banking and Finance, established in 1986, offers a Master of Business degree. The program provides an education that is intensive and specialized within a limited functional area. It aims to improve students’ ability for effective decision-making, facilitating professional growth, and increasing managerial ability. It will broaden their knowledge and understanding in the areas of economics, finance, banking, monetary policy and investment analysis.

Faculty

Professors
Jong-rong Chiou (邱忠榮); William T. Lin (林蒼祥); Chien-liang Chiu (邱建良);
Ho-chuan Huang (黃河泉); Chien-chung Nieh (聶建中); Ming-chih Lee (李命志);
Wo-chiang Lee (李沃牆); Kuang-ping Ku (顧廣平)

Associate Professors
Yu-lung Chen (陳玉瓏); Ching-chih Hsu (徐靖志); Chang-wen Duan (段昌文);
Wan-hsiu Cheng (鄭婉秀); Yun-yung Lin (林允永); Chien-chih Lin (林建志);
Sue-chin Yang (楊斯琴); Hung-kun Chen (陳鴻崑)

Assistant Professors
Cheung-sum Lu (路祥琛); Ren-he Wang (王仁和); I-Ting Lu (呂伊婷)

Degree Requirements

The Department of Banking and Finance offers one program at the undergraduate level (Bachelor of Business) and three programs at the graduate level (Master’s and Ph.D.). The degree requirements for the programs are as follows:

1. Requirements for a Bachelor’s degree in Banking and Finance:
   Completion of 128 credits of courses, including 86 credits of required courses and 20 credits of elective business and finance courses.

2. Requirements for an Executive Master’s degree in Business Administration (EMBA):
   Completion of 36 credits of courses, including 9 credits of required courses and 27 credits of elective courses offered by the department. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for a Master’s degree in Banking and Finance:
   Completion of 39 credits of courses, including 10 credits of required courses and 29 credits of elective courses offered by the department. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for a Ph.D. degree in Banking and Finance:
   Completion of 36 credits of courses, including 22 credits of required courses and 14 credits of...
elective courses offered by the department. Publication requirements before graduation: Students are advised to refer to the department for the requirements. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination.

**Course Descriptions**

**Undergraduate Courses**

**B0071 Investments (2/2):** Covering mainly investment in marketable securities, this course focuses on the investment environment and process. It includes the types of existing marketable securities and where and how they are bought and sold. It is also concerned with how an investor should proceed in making decisions about what marketable securities to invest in and when the investments should be made.

**B0124 Econometrics (3/0):** This course is designed to familiarize students with the importance of econometrics and to train them in using basic econometric tools.

**B0130 Intermediate Microeconomics (3/0):** This course covers economic models, Short-run and Long-run distinction, tax incidence analysis, strategic equilibrium input demand, capital and the rate of return, and optimal resource allocation overtime.

**B0205 International Financial Management (2/0):** This course deals with the international flow of funds and international financial markets, government influence on the exchange rate, international arbitrage and interest rate parity, measurement exposure to exchange rate fluctuations and long-term financing, etc.

**B0263 Money and Banking (3/3):** This course covers the nature and functions of money and finance, commercial banking, central banking, monetary theory, and international monetary relations.

**B0302 Economics (2/2):** This course covers the art and science of economic analysis, some tools of economic analysis, market systems, economic decision makers, elasticity of demand and supply, labor markets and labor unions, etc.

**B0373 Intermediate Macroeconomics (3/0):** This course covers the self-adjusting economy, classical macroeconomic theory, business cycles and short-run macroeconomics, the essentials of the Keynesian system, and market failures versus perfect markets, etc.

**B0718 Futures and Options (3/0):** The main purpose of this course is to introduce the basic concept of the derivatives markets and the financial instruments used in this market. These instruments include the forwards, Futures, swaps and options. How to use these tools for arbitrage, speculation, and hedging is also an important object of this course. This course provides a solid basis for students to study financial engineering and new financial products.

**B0736 Financial Quantitative Methods (2/2):** This course focuses on optimization: a special equilibrium analysis, optimum values and extreme values, extreme values of a function of optimization conditions, solving a first-order difference equation, and the Cobweb model.

**B0759 Financial Institution Management (0/3):** This course covers basic finance, calculus, statistics, and microeconomic theory as a prerequisite.

**B1093 Financial Innovation (0/3):** This course provides a basic overview of mathematical statistics and mathematical finance. It is designed as a required preparatory course for financial engineering.

**B0155 The Mathematics of Finance (3/0):** This course will cover concepts of simple and compound rates of interest, nominal and effective rates of interest, equation of value, present value and current value, annuities and perpetuities, and mortgage loan and bonds. During this course we will focus on the important concepts of simple and compound rates, annuities and other financial instruments, and develop students' mathematical ability used in these topics.
M0271 Financial Management (3/0): This course helps to bridge the gap between theory and techniques of the traditional financial management course and the application of those materials in the actual cases.

M0517 Statistics (2/2): This course emphasizes applications and fundamental concepts of statistics as well as providing a practical orientation that teaches students how to identify the correct method, calculate the statistics, and properly interpret the results in the context of the question or decision at hand. Students will learn not only the algorithms and techniques used to solve related problems, but also the real-world applications that adopt these methods. Students are encouraged to utilize computers in every stage of this course.

M0518 Accounting (2/2): This course offers an introduction to financial accounting, including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses, and cash flows. Students will be exposed to the procedures and practices involved in recording and processing economic transactions in an accounting information system.

S0325 Calculus (2/2): This course offers an introduction to financial accounting, including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses, and cash flows. Students will be exposed to the procedures and practices involved in recording and processing economic transactions in an accounting information system.

B0173 Commercial Law (0/2): This course presents a survey of laws governing various forms of corporate organizations, and laws governing commercial papers, including promissory notes, bills of exchange, and checks.

M0142 Marketing Management (0/3): This is an introductory course, teaching the roles of marketing, marketing ethics, consumer behavior, selection of market, and strategies on product, pricing, distribution, and promotion.

M0800 Business Ethics (0/2): This course provides students with essential knowledge on ethical behavior in today’s business world. To build students’ sense of responsibility and deter corporate fraud, this course covers several major topics such as: stakeholder relationships, corporate governance, and corporate social responsibility.

Master’s Program

B0066 Investment Policy and Analysis (0/3): This course covers conceptual and analytical frameworks for formulating investment policies, analyzing securities and constructing portfolio strategies for individuals and institutions.

B0086 Financial Markets (0/3): This course aims to enhance students’ understanding of the wide range of instruments that are available in today’s financial markets for financing, investing, and controlling risks.

B0124 Econometrics (3/0): This course offers an introduction to econometric theory, parameter estimation for single and multiple equation systems, inference and hypothesis testing, and Monte Carlo studies.

B0128 Microeconomics Analysis (0/3): This course aims to apply the tools of microeconomic theory to problems in industrial organization, decision-making by the firm, input-output analysis, estimations of economic relationships, evaluation of public projects and the welfare economy.

B0206 International Financial Theory (0/3): This course offers an examination of the theories of international monetary systems, balance of payments, adjustment of the theories of determinants of international coordination of macro policies, dynamic adjustments, and other special topics.

B0262 Monetary Theory and Policy (0/3): This course covers the theory and practice of monetary control, supply and demand functions for money, instruments of monetary control, and channels through which money exerts influence on the economy.
B0340 Banking Theory (0/3): This course presents various theories of bank behavior from a firm’s microeconomic perspective.

B0371 Macroeconomics Analysis (0/3): This course covers money and general equilibrium, consumption function, theoretical and empirical studies, investment function, liquidity preference and portfolio balance, and the theory of growth and economic fluctuation.

B0377 Managerial Policy Analysis (0/2): This course covers management theories and applications of quantitative skills in managerial decision-making and its impact on corporate goals and policies.

B0460 The Theory of Investment (3/0): This course offers a comprehensive study of modern investment theory. Special topics of interest, especially those related to recent advances in academics and practices, will be introduced and discussed.

B0461 The Theory of Finance (3/0): This course presents an introduction to the six seminal theories upon which modern finance is founded: utility theory, state-preference theory, mean-variance theory and the CAPM, APT, option pricing theory, and the M-M theorems.

B0508 Financial Engineering (0/3): This course introduces various tools in financial engineering and trains students in how to apply them in risk management and in financial problem solving.

B0611 Applied Econometrics (0/3): This course is designed to help students understand the Autoregressive Integrated Moving Average Models, Vector Autoregression, Unit Roots, Cointegration and Error Correction Model, Generalized Method of Moments Estimator, Autoregressive Conditional Heteroscedasticity Models, Simulation Models, and Monte Carlo Studies.

B0696 Financial Institution Management (0/3): This course covers the following four sections: an introduction to the financial services industry, sources of risk and return, how to measure risk and return, and how to manage risk and return.

B0697 Corporate Financial Policy (3/0): This course is designed to help students understand investment, financing, and dividend decisions in both perfect and imperfect capital markets.

B0699 Interest Rate Derivatives (3/0): Topics of this course include: interest rates and duration, stock price behavior models, the Black-Scholes Model, numerical procedures, extent ions of the theoretical framework for pricing derivatives, interest rate derivatives, and interest rate derivation.

B0710 Macroeconomic Theory (3/0): This course covers the following: the Solow Growth Model, the Ramsey-Cass-Koopmans Model, New Growth Theory, and the Overlapping Generations Model and Money.

B1009 Financial Research Method (3/0): This is a course in introductory financial research methods. The aims of this course are: (1) to introduce empirical topics relevant to financial academics and practitioners; (2) to train students in implementing research ideas via econometric modeling.

M0483 Bank Management (0/3): This course covers policies and decisions of commercial bank managers in the areas of organization, personnel, credit, asset, liability and capital management within the legal, competitive and economic environment.

S0425 Quantitative Methods (3/0): Topics of this course include linear algebra, calculus, difference and differential equations, and linear and non-linear programming and operations research.

Ph.D. Program

B0411 Risk Management (3/0): This course is designed to overview cutting-edge quantitative techniques for quantitative risk management or financial econometrics, e.g. multivariate value-at-risk estimation, credit risk modelling, and stochastic variance modelling.

B0711 Seminar on Macroeconomics (0/3): Topics of this course include: The Real Exchange Rate and the Terms of Trade, Uncertainty and the International Financial Markets, Imperfections in

**B0712 Advanced Econometrics (3/0):** This course is designed to help students understand the Optimization and Non-linear Regression Models, Non-parametric Estimations, Models for Panel Data, Models with Discrete Dependent Variables, Limited Dependent Variable and Duration Models, State Space Models, and the Kalman Filter Method.

**B0714 Seminar on Investment Theory (3/0):** This course is designed to expose students to empirical investments in different topics. In most of the meetings, the instructor will lead a discussion of the materials, while the papers will be assigned to specific students who are responsible for presenting and leading discussions of the paper.

**B0715 Seminar on Microeconomic Theory (3/0):** This course focuses on special topics of microeconomics, with attention paid to cost and profit, consumer behavior, uncertainty, game theories, and market structure.

**B0705 Advanced Mathematic Finance (3/0):** This is a course about advanced financial economics and financial modelling, which enables the students to apply the methods to research and analysis.
DEPARTMENT OF RISK MANAGEMENT AND INSURANCE

Degrees Offered: B.A., M.B.A. EMBA

Chairman: Miao-huei Tsen (曾妙慧)

The Department

In order to promote economic development, the Department of Insurance and Banking was established in 1965. In 1969, the department was divided into two divisions: Division of Banking and Division of Insurance. In 1973, the Division of Insurance became the Department of Insurance, the first department of insurance in Taiwan. Two years later, the evening program of the department was established. In 1991, one more class was added to the evening program to meet the growing demands of the insurance market. In 1997, the evening program became part of the regular program to meet new college regulations. The master’s program in insurance management and Executive MBA were established in 2000 and 2002, respectively. The goal of the department is to develop professionals in insurance and risk management with international perspectives. In order to meet development tendencies in financial market, the department was renamed the department of Risk Management and Insurance in 2018.

Our courses focus on both theoretical and practical issues from local and international outlooks and we modify courses timely in accordance with changing financial environment. Teaching activities include business visits, enterprise internships, and special topic lectures to complement course content. Part- and full-time faculty members have solid theoretical foundations of insurance and extensive experience in the insurance industry so that students will gain deep and extensive understanding of insurance. We emphasize certificate acquisition and offer a certificate program to guide students to obtain certificates of insurance. Besides, we offer a scholarship to encourage students to join the program and to students who pass the examination to strengthen students’ professional skill and increase students’ job competitiveness. Students will gain a comprehensive understanding of practical operations and get used to workplace environment earlier through enterprise internships. The graduates are over every field of insurance industry including life and property insurance companies, insurance brokers, insurance agents and surveyors. Some are supervisors in government supervision agencies and the department of risk management of insurance companies. Each makes contributions to society in his or her own way.

To meet international trends, we will strengthen academic exchanges with cross-strait and international related departments. We will increase courses of insurance company governance and risk management in accordance with the trend of financial supervision. Besides, we will focus on industry-university cooperation to increase the research level in the department and students’ practical skills. Moreover, we will strengthen the certificate program to increase job competitiveness for students.

Faculty

Professors
Yi-jen Hu (胡宜仁); Jerry C. Y. Miao (繆震宇); Chi-ling Wang (汪琪玲)

Associate Professors
Chung-jen Hao (郝充仁); Yao-shyan Lai (賴曜賢); Jyun-ji Tien (田峻吉); Hui-wen Tang (湯惠雯); Miao-huei Tsen (曾妙慧); Chia-Ling Ho (何佳玲)

Assistant Professors
Ying-Erh Chen (陳映而)

Lecturer
Yueh-lung Wu (吳月瓏)

Degree Requirements

The Department of Insurance offers one program at the undergraduate level (Bachelor of Business) and two programs at the graduate level (Master’s). The degree requirements for the programs are as follows:
1. Requirements for a Bachelor’s degree in Insurance:
   Completion of 128 credits of courses, including 86 credits of required courses and 26 credits of elective insurance courses.

2. Requirements for an Executive Master’s degree in Business Administration (EMBA):
   Completion of 36 credits, including 9 credits of required courses and 27 credits of elective courses offered in the program. Students are also required to submit a written thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for a Master’s degree in Insurance:
   Completion of 39 credits of courses, including 10 credits of required courses and 29 credits of elective courses offered in the department. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

B0001 Life Insurance (3/0): The course will help students with better understanding of the basic concept of life insurance (including life insurance foundation, life insurance market analysis, life insurance premium rates and reserves, life insurance types, life insurance contracts and life insurance marketing).

B0017 Fire Insurance (2/0): This course is to understand the theory and practice of fire insurance, including coverages, underwriting and claims adjustment, fire rating structure, and reinsurance arrangement in fire insurance.

B0033 Essentials of the Civil Law (2/2): This course addresses the basic concept of the Civil Law. The instructor will particularly focus on the general principles of the Civil Law, family law and the law of inheritance.

B0037 Reinsurance (2/0): Topics of this course include development of reinsurance markets, elements and principles, facultative reinsurance, treaty reinsurance-pro rata, treaty reinsurance surplus share, excess reinsurance, contract wording and accounting.

B0071 Investments (3/0): This course is set to help the students to know the general principles

B0072 Motor Insurance (2/0): This course offers an introduction to motor insurance, motor physical damage coverage and liability coverage, discussion of its merits and demerits.

B0075 Social Insurance (0/3): For the purpose of giving students a better understanding of the difference between social insurance and commercial insurance, the course mainly introduce various social insurances operated by government, such as Soldiers Insurance, Government Employees Insurance, Farmers Insurance, Employment Insurance and Pension, etc.

B0167 Health Insurance (0/2): To learn about the principles, coverages, the policy design and underwriting of health insurance. In addition to the commercial insurance, we also discuss the social health insurance issues.

B0173 Commercial Law (0/2): This course is set to make the students know about the concepts of laws dealing with related industry and business. The instructor will focus on the Company Law and the law of bills and notes.

B0210 International Trade (3/0): Building on the basic concepts related to international economics and financial environment, this course also further extends knowledge of international business and its related issues.

B0261 Liability Insurance (0/2): This course is set to help the students to know the general principles
of liability insurance. I will introduce the "liability" in Civil Law to realize more about "liability" insurance. Furthermore, I will guide the students to study various liability insurance policies and their judicial issues.

**B0302 Economics (2/2):** Students are expected to be familiar with basic economic principles, benefits of trade and basic welfare economics. In particular, students should have an understanding of gains from trade, supply, demand, elasticity, consumers and producers, efficiency of markets and costs of taxation, firm behavior and industry organization. In particular, students should have an understanding of costs of production, competitive markets, monopolies and national income.

**B0318 Transportation Insurance (0/2):** This course offers an introduction to transportation insurance and marine insurance, perils of the seas, fires, total loss, general average, particular average, institute clause, concept of inland marine insurance, and concept of air cargo insurance.

**B0411 Risk Management (2/0):** This course will focus on the principles of risk management including the tools and process of designing and implementing a risk management program such as identification of risks and associated potential costs, analysis of the causes of risk of financial loss, determination of the selected strategies and life insurance.

**B0418 Employee Benefits (2/0):** (A) learning theory and development of employee benefits, employee welfare system design and contents and related employee benefits law. (B) By organizing different welfare systems and corresponding instructions, students will understand existing employee benefits and insurance product contents and structure. (C) Through insurance provided advisory services, students can explore the insurance needs of employees, and compare the gap between welfare and employee needs.

**B0575 Property Insurance Company Operations (2/0):** The purpose of this course is to introduce a series of Non-Life insurance operations, including, insurance market, products design, marketing, underwriting, reinsurance, claim adjusting, investment, and others related topics of Non-Life insurance operations.

**B0576 Personal Insurance Company Operations (2/0):** This course introduces the topics of life insurance management in the framework of finance theories.

**B0692 International Insurance Market (0/2):** This course introduces the international insurance market, and analyzes international risk management trends.

**B0749 Insurance English (0/2):** This course will introduce insurance terms, guide students to analyze insurance contracts and clauses of English, and to read the articles of insurance. We will explain important grammar, vocabularies to enable them to grasp important insurance issues.

**B1089 New Financial Instrument Marketing (0/2):** The course will focus on introducing the new financial instruments, how they work in financial markets, and how TAIFEX develops and innovation in derivatives. The trading simulation of futures and options will be given to students as well. We expect students will have a basic awareness of investing after the trading simulation. Several professionals will be invited to share their practical experiences in respective areas.

**B1157 The Guidance of Insurance Professional License (2/0):** Civil law and insurance law are the most important laws which one works with in insurance enterprises should know. Many insurance license exams contain civil law and insurance law, for example the insurance underwriter & the claim adjuster held by The Non-Life Underwriters Society of The Republic of China. This exam subject named ‘Introduction to Jurisprudence’ consists of sections as follows: 1. General principles & general provisions of obligations in civil law; 2. General principles, insurance contracts & non-life insurance in insurance law. A quiz will be held in each class.

**B1402 Insurance Law (3/0):** This course is set to illustrate Insurance Contract Law. There are some topics and issues in the course, such as principle of good faith, and principle of loss indemnification, duty of disclosure, and the coverage disputes. Furthermore, the instructor will collect the related judicial decisions for case studying.
B1403 Annuity Insurance (2/0): Students will understand the definition of annuity, and the course will introduce the category of annuity, analyze personal annuity, and analyze corporate annuity.

B1404 Life Insurance Mathematics (3/0): This course covers measurement of risk in life insurance, annuities, net single premiums, net level premiums, gross premiums, life insurance reserves, surrender values, surplus distribution, and mathematics of retirement.

B1416 Corporate Governance in Banking and Insurance (0/3): This course introduces the development of corporate governance, the framework and practices of corporate governance, the role and responsibilities of owners and board, the design of executive compensation, the ranking system of information disclosure, and other important issues. The course also discusses practical examples of successful and unsuccessful systems of corporate governance and their consequences. Besides, this course explores the effects of corporate governance mechanism on mitigating agency problems and earnings manipulation.

B1439 Special Topics on Insurance Operations (2/0): This course will help students to understand how to find out important insurance topics, how to do a project, and finish a project under a supervisor.

B1463 Casualty Insurance (0/2): The course covers all other property insurance except fire insurance, transport insurance, liability insurance and automobile insurance.

B1464 Insurance Marketing (0/2): This course introduces marketing tendency, insurance operation, insurance marketing systems, insurance products and proposing insurance programs.

B1467 Applied Statistics for Insurance (0/2): The course introduces different important topics in statistics from the angle of the insurance practice. Students will learn the technology of statistical analysis through different empirical data and actual cases.

B1468 Personal Financial Planning (0/3): This course aims to develop students’ personal financing perception and abilities. Topics cover a broad range of financial planning areas, including adaptive testing, family financial statements and budgeting preparation, cash-flow management, insurance planning, investment strategies, and tax planning etc. It also includes searching related financing information, developing a comprehensive financial planning, and using these concepts to achieve ones' financial goals.

B1470 Integrated Risk Management (0/2): Human Resources and Labor Standards actually have a great influence on each other. Also this is the most important link in enterprise risk management. It will be the major point of this lesson.

B1471 Practicum in Insurance Industry (0/2): This course cooperates with renowned life insurance companies and property/casualty insurance companies to provide internships for students. The purpose of this course is for students to apply their insurance knowledge they have learned in school to their internships. Furthermore, another purpose of this course is for students to combine their knowledge of theories and practices to enhance their professionalism and competitiveness of the insurance industry.

B1482 Programming of Risk Management and Insurance (0/2): Insurance is one of the most important areas, and effective, professional skills, especially in the commercial line are very complex and irregular, so the proper use of an insurance arrangement proposal affects how to deal with one of the tasks that will become most important in the future. On the other hand, for the insurance industry, how to help a company to arrange the proper insurance proposal has become a necessary means of competition, so that this course is to meet the above objective, as students understand the insurance market and the insurance planning practice.

B1499 Design of Insurance Production (0/2): Students learn how to design the products of insurance for non-life insurance companies, including the principles and process of design, the contents of product, reasonable formats and wordings of policy.

B1501 Practice on Asset & Liability Management for Insurance Co. (3/0): The purpose of this course is to provide students the concepts about how insurance companies manage their assets and liabilities (ALM). This course includes several important topics of ALM, such as insurance law, RBC,
IFRS, reserve, etc. Students will understand more details in operating asset and liability of an insurance business.

**B1502 Investment-Oriented Insurance Products (3/0):** The course introduces categories, devices and regulation of investment-linked insurance policies. Besides, the course brings in practices and financial instruments enabling students to learn investment-based insurance planning and product links.

**B1581 Operation and Management of Property Liability Insurance (2/0):** The course combines company and campus resources to improve Property Liability Insurance class.

**B1582 The Operation and Management of Life Insurance Seminar (2/0):** This course is a lecture-style course; we invite well-known insurance company managers to school to give lectures, bring students a new perspective of life insurance practice. At the same time, lectures provide Q & A, offering students practical and research consulting.

**B1698 The Guidance of Insurance Professional License (2/0):** The Institutes’ Chartered Property Casualty Underwriter (CPCU)® designation program is built on a foundation of broad technical knowledge, high ethical standards, and demonstrated industry experience. The Institutes are recognized around the world as the premier provider of Insurance Knowledge Solutions. The Institutes have been supporting insurance industry education needs for over 100 years, in over 50 countries.

**B1699 Finance and Technology (0/2):** This course aims to provide a basic introduction of Fintech, to explain how to not only recognize the kinds of Fintech services, but also to develop the imagination and creativity of financial innovations, and to give examples using easy-to-understand categorization as well as context. Through the analysis and discussion of the reports, students will have a better understanding of the changes and trends brought by financial technology.

**E1034 Introduction to Computers (2/0):** The course is not only trains students in computer knowledge, including computer hardware, software applications and computer networks, but also encourages students to understand spreadsheets, databases, multimedia applications, systems analysis and design and programming languages. Besides, e-commerce, cloud services, information security and IT ethics and law, are introduced such that students can have enough skills for further investigating and learning more advanced techniques or applications. Students can apply information abilities and skills to their daily life.

**M0003 Human Resources Management (2/0):** People are the most important asset for any organization, so all students in management fields and practitioners must have enough knowledge of HRM. Because HRM consists of all people related activities from entering to exiting an organization, this course will introduce and explore these issues deeply. The HRM contents include the following issues: knowledge of labor market, HRP, job analysis, recruitment & selection, training & development, performance appraisal, salary & benefits, retirement & pensions, and labor relations.

**M0142 Marketing Management (0/3):** Important marketing related concepts will be introduced in this course. Besides, students will learn how to create customer value, target the correct market, and build customer relationships. Furthermore, the critical skills and knowledge which should be applied in the 4P strategies will be also emphasized in the course.

**M0271 Financial Management (3/0):** The main purpose of this course is to illustrate the major decisions of corporations including investment decisions, finance decisions and dividend policies. Students will understand how the modern corporates deal with their business decisions under the economic system.

**M0399 Managerial Economics (3/0):** Based on the theory of economics, we teach the students to analyze and forecast the situation and risk of the market for the business. Accordingly, students understand how to make the decisions of production and pricing.

**M0405 Management (3/0):** The course purpose is to introduce fundamental management including planning, organizing, leading and controlling, and to provide practice in Taiwan business to let students learn the management process. Finally, we will ask students make teams and complete some reports.
M0517 Statistics (2/2): This course emphasizes applications and fundamental concepts of statistics as well as providing a practical orientation that teaches students how to identify the correct method, calculate statistics, and properly interpret the results in the context of the question or decision at hand. Students will learn not only the algorithms and techniques used to solve related problems, but also the real-world applications that adopt these methods. Students are encouraged to utilize computers in every respect of this class.

M0518 Accounting (2/2): This course offers an introduction to financial accounting, including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses, and cash flows. Students will be exposed to the procedures and practices involved in recording and processing economic transactions in an accounting information system.

M0800 Business Ethics (2/0): This course is designed to establish the concept of basic ethics and corporation spirit by teaching, discussion and case study. We expect that all students can widely apply these concepts in their future learning and workplace.

S0325 Calculus (2/2): This course offers an introduction to financial accounting, including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses, and cash flows. Students will be exposed to the procedures and practices involved in recording and processing economic transactions in an accounting information system.

Master’s Program

B0575 Property Insurance Company Operations (3/0): The purpose of this course is to introduce a series of Non-Life insurance operations, including, insurance market, products design, marketing, underwriting, reinsurance, claim adjusting, investment, and others related topics of Non-Life insurance operations.

B0576 Personal Insurance Company Operations (3/0): This course introduces the important topics of life insurance management from finance theories. We will follow recent academic papers and regulation of the life industry in the class. Students are required to learn the relevant theories, and their application to life insurance management.

B0797 Advanced Study in Transportation Insurance (0/2): This course aims to introduce and analyze the terms in Institute (International) Cargo Clauses (A), (B), and (C). As well, problems raised in the practical application will be discussed in the class. Essential terms of International Hull Clauses, Protection & Indemnity Insurance will be illustrated and discussed. Skills to apply these terms are also shown by different case studies.

B0798 Advanced Study in Fire Insurance (0/2): This course presents principles of insurable interest, utmost good faith, indemnity, contribution, subrogation, and proximate cause applied in fire insurance; introduction of fire insurance coverage in four countries; introduction to business interruption insurance and other consequential loss insurances; underwriting, claims, and reinsurance for fire insurance.

B0800 Advanced Study in Life Insurance (0/2): This course will provide students to have a better understanding of life insurance practice and the details of the latest development of the topic in discussion.

B0802 Advanced Study in Health and Accident Insurance (0/2): This course firstly discusses the principles of health and accident insurance, then policy design, underwriting and claim. In addition to the commercial insurance, we also discuss the social insurance issues.

B0830 Advanced Study in Social Insurance (0/3): For the purpose of giving students a better understanding of the difference between social insurance and commercial insurance, the course mainly introduces various social insurances operated by government, such as Government Employees Insurance, Farmers Insurance, Employment Insurance, Pension, and so on.

B0831 Comparative Study on the Laws and Regulations of Insurance (0/2): 1.Taiwan Insurance
Code was derived from the laws of England, France, Japan, Germany, California and New York, thus this course focuses on the comparative study for the purpose of the interpretation and application of Taiwanese law. This course is limited to the study of commercial insurance law with a focus on the comparative study of the insurance laws of Taiwan and Mainland China. In addition, the course is supplemented by the study of Law and Regulation of Professional Liability Insurance of Doctors, application forms of Personal Insurance and Insurance Medicine from a practical perspective.

**B0882 International Risk and Insurance (0/2):** This course aims to investigate the strategies of risk management and insurance planning and to analyze the change of international risk as well. Various insurance markets in major countries are introduced in the class. Besides, experts from different fields are invited to deliver speeches to enhance students’ understanding.

**B1005 Managing a Pension Plan (0/3):** This course introduces the pension schemes, and corresponding pension fund management. Students can learn retirement plans and pension fund management from this course.

**B1233 Advanced Study on Asset Liability Management for Insurance Co. (3/0):** The purpose of this course is to provide students the concepts about how insurance companies manage their asset and liability. This course will go through several important topics of Asset and Liability Management (ALM) such as insurance act, Risk Based Capital (RBC), International Financial Reporting Standard (IFRS), reserve, etc.

**B1381 Study on Insurance Statistics (0/3):** This course introduces essential acknowledgement of statistics analysis for insurance research and is coupled with the instruction of databases and the application of statistics package to enhance students’ ability in independent study and analysis. The course focuses on quantitative research and includes the introduction of insurance and financial databases, the applications and practices of statistics packages, data collection and transformation, descriptive analysis, primary methodologies, the analysis of empirical results, and the instruction of academic research.

**B1725 Advanced Study On Risk Management And Insurance (3/0):** This course will introduce the principles of risk management and insurance for master students. We will analyze several current important topics in risk management and insurance. Meanwhile, students will have a better understanding about how risk management and insurance work in the real world.

**B1726 Employee Benefit And Group Insurance (2/0):** To understand employee benefits and analyze group insurance

**B1728 Property Insurance Practices and Issues (3/0):** This is a collaborative course which is in cooperation with Fubon insurance company. In this course, we are substantially involved in and deeply investigate the practical issues which are confronted and raised by FB insurance company.

**M0800 Business Ethics (1):** The current course introduces the ethical relationships between the business and the society, and helps students understand the multi ethical obligations of businesses toward stakeholders inclusive employees, stockholders, competitors, community, and environment.

**M0144 Seminar in Marketing Management (3/0):** This course focuses on business level marketing strategy and uses the marketing planning process as the framework for understanding the integration and coordination of marketing decisions. You will develop skills in creating and evaluating marketing plans, strategies, and implementation programs so that you will be better prepared to manage the marketing problems you will encounter in your profession.

**M0272 Seminar in Financial Management (3/0):** The course introduces the fundamental principles of financial management, financial statements of non-insurance companies and insurance companies, and the techniques of financial analysis so that students can learn how to interpret financial figures and disclose the financial status of the firms. Next, the course introduces International Financial Reporting Standards (IFRSs) and their influence on the insurance industry, fund management, supervision & regulation, and solvency.
T0081 Research Methodology (0/3): This course is designed to train the research ability of the graduate student. It contains exploring the topic of a dissertation, organizing the structure of a dissertation, introducing the main methodologies, and the dissertation proposal presentation for each student.

B0796 Insurance Theory (3/0): The content of this course includes: (1) the theory of insurance, (2) the finance of insurance, (3) the status quo of our insurance management and (4) the current problems for our insurance and the improvements thereof.

B0799 Advanced Study in Casualty Insurance (0/2): Topics of this course include: Automobile Insurance; Crime Insurance; Credit Insurance; Bonding Insurance; Engineering Insurance; Aviation Insurance; Title Insurance; Glass Insurance; Personal Accident Insurance; Other Miscellaneous Casualty Insurance; Multiple Lines Insurance; Special multi-perils policy.

B0802 Advanced Study in Health and Accident Insurance (2/0): This course presents the definition and principles of health and accident insurance, HMO and DRG system, moral hazards associated with health and accident insurance, and national health insurance.

B0925 Advanced Study in Personal Insurance (0/2): This course focuses on topic discussions, including risk-based capital, policy dividends, U-link policy, long-term care, bank assurance, etc.

B0987 Advanced Study in Property and Liability Insurance (0/3): This course covers analysis and discussion of property and liability insurance policies, including fire, automobile, marine, inland marine, aviation, liability, guarantee, and other property insurance.

**EMBA Master’s Program**

B0575 Property Insurance Company Operations (3/0): The purpose of this course is to introduce a series of Non-Life insurance operations, including insurance market, products design, marketing, underwriting, reinsurance, claim adjusting, investment, and other related topics of Non-Life insurance operations.

B0576 Personal Insurance Company Operations (3/0): This course introduces the important topics of life insurance management from finance theories. We will follow recent academic papers and regulation of the life industry in the class. Students are required to learn the relevant theories, and their application to life insurance management.

B0631 Financial Management of Insurance (3/0): The course begins with introducing financial statements of insurance companies and the techniques of financial analysis so that students can learn how to interpret financial figures and disclose the financial status of the firms. Next, the course introduces fund management, supervision & regulations, asset and liability management of the insurance industry as well as International Financial Reporting Standards (IFRS), which affect financial reporting of insurance industry.

B0830 Advanced Study in Social Insurance (0/3): For the purpose of giving students a better understanding of the difference between social insurance and commercial insurance, the course mainly introduces various social insurances operated by government, such as Government Employees Insurance, Farmers Insurance, Employment Insurance, Pension, and so on.

B0831 Comparative Study on the Laws and Regulations of Insurance (0/2): 1. Taiwan Insurance Code was derived from the laws of England, France, Japan, Germany, California and New York, thus this course focuses on the comparative study for the purpose of the interpretation and application of Taiwanese law. 2. This course is limited to the study of commercial insurance law with a focus on the comparative study of the insurance laws of Taiwan and Mainland China. In addition, the course is supplemented by the study of Law and Regulation of Professional Liability Insurance of Doctors, application forms of Personal Insurance and Insurance Medicine from a practical perspective.

B0925 Advanced Study in Personal Insurance (0/2): This course will provide students with a better understanding of life insurance practice and the details of the latest development of the topic in
B0987 Advanced Study in Property and Liability Insurance (0/3): This course covers analysis and discussion of property and liability insurance policies, including fire, automobile, marine, inland marine, aviation, liability, guarantee, and other property insurances.

B1005 Managing Pension Plan (0/3): This course introduces pension schemes, and corresponding pension fund management. Managing the retirement shock and doing financial planning for retirement are discussed in this course. Students can learn retirement plans and pension fund management from this course.

B1233 Advanced Study on Asset Liability Management for Insurance Co. (0/3): The purpose of this course is to provide the concepts related to how insurance companies manage their asset and liability. The course includes several important topics of asset and liability management such as insurance law, RBC, IFRS 4, reserve, etc. The graduate students will understand more details in operating the asset and liability of an insurance business. Furthermore, it's a necessary condition to read papers related to ALM of JRI, Geneva Review.

B1408 Advanced Study on Product Design of Insurance (3/0): The course teaches how to design the products of insurance for non-life insurance companies, including the principles and process of design, the contents of products, reasonable formats and wordings of policy, basic concepts of pricing for the products.

M0800 Business Ethics (1): The current course introduces the ethical relationships between the business and the society, and helps students understand the multi ethical obligations of businesses toward stakeholders inclusive of employees, stockholders, competitors, community, and environment.

M2074 Leadership and Teamwork (3): The current course introduces the theories and practices of leadership and team building to help students apply what they learned from the course for work or future studies.

T0081 Research Methodology (3): This course is designed to train the research ability of the graduate student. It contains exploring the topic of a dissertation, organizing the structure of a dissertation, introducing the main methodologies, and the dissertation proposal presentation for each student.
DEPARTMENT OF INDUSTRIAL ECONOMICS

Degrees Offered: B.A., M.A., Ph.D.

Chairman: Hsiao-wen Hung (洪小文)

The Department
The Department of Industrial Economics was formed from the previous Department of Cooperative Economics in 1992. Our teaching objective is to provide students with a basic knowledge of the field of Industrial Economics and to prepare them for both further studies and future employment. We also encourage students’ enthusiasm and enhance their ability in conducting research. Our ultimate goal is to make this department one of Taiwan’s premier industrial economics research centers.

Our graduate program of Industrial Economics was established in 1993. Its teaching objectives are to equip students with professional knowledge in Industrial Economics, to provide students with the skills required for further research and to give students a competitive edge in the workforce.

Faculty
Professors
Chao-cheng Mai (麥朝成); Chun-hung Lin (林俊宏); Pei-chien Lin (林佩蒨);
Ming-fang Tsai (蔡明芳)

Associate Professors
Ching-ting Tsai (蔡進丁); Teng-yuan Hu (胡登淵); Hsiao-wen Hung (洪小文);
Shun-fa Lee (李順發); Ming-feng Hung (洪鳴丰); Bin-tzong Chie (池秉聰);
Kuo-feng Kao (高國峯)

Assistant Professors
Chia-hua Liu (劉家樺)

Degree Requirements
The Department of Industrial Economics offers one program at the undergraduate level (Bachelor of Business) and two programs at the graduate level (Master’s and Ph.D.). The degree requirements for the programs are as follows:

1. Requirements for a Bachelor’s degree in Industrial Economics:
   Completion of 128 credits of courses, including 89 credits of required courses and 23 credits of elective industrial economics courses.

2. Requirements for a Master’s degree in Industrial Economics:
   Completion of 34 credits of courses, including 11 credits of required courses and 23 credits of elective courses offered in the department. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for a degree of Ph.D. in Industrial Economics:
   Completion of 35 credits of courses, including 19 credits of required courses and 16 credits of elective courses offered in the department. Publication requirements for graduation: students are advised to refer to the department for related requirements. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions
Undergraduate Courses

B0302 Economics (2/2): This course of principles of economics covers the basic economic theories and relevant issues in the fields of microeconomics and macroeconomics. The topics discussed in the...
The sequence of microeconomics include demand and supply, consumption theory, production cost and the structures of various markets. On the other hand, the topics discussed in the sequence of macroeconomics include national income, general prices, unemployment, macroeconomic modeling, macroeconomic policies, money, financial intermediaries, economic growth and so on.

**B0130 Intermediate Microeconomics (3/3):** The goal of this course is to present a treatment of the methods of microeconomics that would allow students to apply these tools on their own and not just passively absorb the predigested cases described in the text. In particular, we emphasize the fundamental conceptual foundations of microeconomics and provide concrete examples of their application rather than attempt to provide an encyclopedia of terminology and anecdote.

**B0301 Introduction to Mathematical Economics (0/3):** This course is designed to serve as the primary lecture for undergraduate students in mathematical economics. We assume that the student is familiar with calculus through partial differentiation and with basic matrix operations. The student will learn by repeated application how mathematics and economics interanimate each other, how particular mathematical tools have developed to deal with problems of the types that frequently occur in economics, and mathematical tools.

**B0373 Intermediate Macroeconomics (3/3):** Macroeconomics is the study of long-run and short-run performances of an economy as a whole, concerning the issues about long-run economic growth and short-run fluctuation of national income, general prices, unemployment, interest rate, and so on. As such, this course will first introduce the development of various macroeconomic theories, then demonstrate the application of these theories to analyze the movements of the economic variables mentioned above, and finally illustrate the macroeconomic policies that can affect the performance of the whole economy.

**S0325 Calculus (2/2):** This introductory calculus course covers differentiation and integration with applications in business, economics, and the social and life sciences. Topics to be discussed in this semester include concepts of functions; limits and continuity; differentiation rules; curve sketching; related rates; optimization problems; exponential and logarithmic functions and their derivatives.

**M0405 Management (3/0):** Management is a course that will introduce functions of management, including planning, organizing, leading, and controlling. This course begins with a discussion of the current issues and case method in management. The course is designed to integrate the theories in the area with real world applications to help students to learn these concepts. Students will understand the needs of modern organizations, including emerging national and international trends.

**M0517 Statistics (2/2):** Statistics is the collection of procedures and principles for gathering data and analyzing information in order to help people make decisions when faced with uncertainty. This one-semester course is an introduction to inferential statistics. Topics covered in this course include hypothesis testing, chi-square tests, regression analysis, and analysis of variance.

**M0518 Accounting (2/2):** The essential purposes of accounting are to report a company’s financial conditions, operating results, and changes of financial status. This course aims to instruct students in the logic behind accounting, accounting processes, the preparation of financial statements, and key concepts of financial analysis.

**B0481 Business Management (0/2):** This course aims to introduce basic theory, practice and cases of business management; particularly making comparison about the business model of different industries. It is expected to help the learner build the fundamentals for advanced management courses.

**B0146 Public Finance (2/2):** Public policy is not the product of policy experts but rather is the result of democratic decision making. A complete understanding of the public sector must incorporate an understanding of those political institutions that actually produce public policy. This course attempts to integrate the study of the various aspects of public sector economics by viewing all the government’s activities as a product of the democratic decision-making process.

**B0453 Financial Economics (3/0):** This course provides various fundamental concepts on corporate finance to develop the applications of corporate financial planning. The topics include knowledge of financial statements, short-term and long-term planning of corporate financial structures, interest rates,
corporate bonds and stocks. The issues of capital investment decision and the return on project investment will also be discussed.

**B0125 Introduction to Econometrics (2/0):** This course is designed to provide an introduction to the theory and application of simple regression analysis. It intends to provide students a working knowledge of basic econometric tools so that they can apply these tools to modeling, estimation and inference in the context of simplified real world economic problems by using simple regression.

**B0124 Econometrics (0/2):** This course is designed to provide an introduction to the theory and application of simple and multiple regression analysis. It intends to provide students a working knowledge of basic econometric tools so that they can apply these tools to modeling, estimation and inference in the context of real world economic problems by using multiple regression.

**B1400 Introduction to Industrial Economics (3/0):** The Basic Issues in Industrial Economics covers issues about the Introduction of Industrial Economics, Taiwan’s market structure, the empirical evidence and the Anti-trust.

**B1401 Advanced Industrial Economics (0/3):** Advanced Industrial Economics summarizes concepts covered from firm collusion, dominance, product differentiation, price discrimination, R&D, etc.

**B1591 Applications in Economics (I) (1/0):** This course of principles of economics covers the basic economic theories and relevant issues in the fields of microeconomics and macroeconomics. The topics discussed in the sequence of microeconomics include demand and supply, consumption theory, production cost and the structures of various markets. On the other hand, the topics discussed in the sequence of macroeconomics include national income, general prices, unemployment, macroeconomic modeling, macroeconomic policies, money, financial intermediaries, economic growth and so on.

**B1592 Applications in Economics (II) (0/1):** This course of principles of economics covers the basic economic theories and relevant issues in the fields of microeconomics and macroeconomics. The topics discussed in the sequence of microeconomics include demand and supply, consumption theory, production cost and the structures of various markets. On the other hand, the topics discussed in the sequence of macroeconomics include national income, general prices, unemployment, macroeconomic modeling, macroeconomic policies, money, financial intermediaries, economic growth and so on.

**B0202 International Finance (3/0):** This course studies the theory and practice of international finance. We will focus on the issues regarding the evolution of international finance institutions, the determining factors of exchange rate, the influence of exchange rate, the basic concepts of hedging, arbitraging, and speculating, and the basic operation of options and futures.

**B0219 International Trade Theory and Policy (0/3):** This course aims to introduce students to some basic international trade theories, including Ricardian Model, Heckscher-Ohlin Model, New Trade Theory, and so on. Moreover, we will also introduce some trade policies, such as tariff, quota, and FTA.

**B0475 Regulatory Economics (0/3):** This course introduces antitrust law, economic regulation and social regulation. We will start from a perfect competition market. Keeping a market without entry barrier becomes the center of antitrust law. However, when the production cost can be lower with only one firm in the market, government needs another kind of regulation to ensure the economy has both the cost advantage and low price. Finally, for the problems of externality, product safety, and worker safety, the social regulation should be applied to maintain a cleaner and safer environment.

**Master’s Program**

**B0130 Intermediate Microeconomics (3/0):** This course aims at providing first-year graduate students with comprehensive economic theories of firm and consumer. The related mathematical tools are provided in detail as well. It also provides a brief introduction to game theory, welfare economics, public economics, labor economics, and health economics.

**B0124 Econometrics (2/0):** Econometrics is based on the development of statistical method for estimating economic relationships, testing economic theories, and evaluating government policies and business decisions. This course introduces the structures (or types) of economic data first and then
outline the appropriate methodologies used to analyze them. Topics covered include multiple regression on cross-sectional data, regression on time series data, panel data models, instrumental variables estimation, simultaneous equation models, and limited dependent variable models.

B1667 Price Theory and Practice (0/3): This course introduces the development of behavioral and experimental economics. Rational economic decision makers and perfect information are the sufficient conditions for the deployment of price mechanism. However, how will the market react if the decision makers have judgmental bias, the market information is in asymmetry, or there is externality?

B1670 Macroeconomic Policies Analysis (3/0): This course explores the policy effects, including fiscal and monetary policies, on employment, outputs, prices, and economic growth, by a dynamic approach. Three topics are contained in this lesson. Part 1 is the corresponding principle and rational expectation. Part 2 studies the issue about economic growth, first presenting the Solow model with exogenous technical progress, and then extending to the endogenous growth model based on the idea of productive externalities. Part 3 focuses on the analysis of unemployment.

B1671 Data Analysis and Empirical Research (0/3): This course introduces advanced econometric concepts and empirical analyses, including multiple regression, dummy variables, heteroskedasticity, panel data, 2SLS, and simultaneous equations. Limited dependent variable models are also discussed in this course.

B1673 Practicum in Industrial Economy (2/0): Students are required to intern in enterprises so as to apply the knowledge they have learned in this class to practical matters.

B1682 Economic Performance between Countries (2/0): This class introduces students to the field of economic growth, which explores the question of why certain countries are rich and others are poor, and why some countries grow quickly and others slowly from an economist’s point of view. From the accumulation of capital to the role of geography, the class will explore the various determinants of the ‘success’ or ‘failure’ of a country today and over time. Both an empirical and theoretical approach will be used to answer these questions, supplemented by the most current literature in the field.

B1705 Special Topics in Industry (1/0): This course includes discussion of research papers written by researchers from Tamkang and other universities. It also provides the discussion on the progress of students’ theses.

B0770 Topics on the Health Care Industry (0/3): This course provides an introduction to features of the healthcare industry, related theory and empirical studies of health economics. The health care sector continues to grow in size, both in absolute dollars and as a portion of the overall economic activity of Taiwan. This alone makes the study of health care a topic of potential importance. Health care represents a collection of services, products, institutions, regulations, and people. The theories and empirical studies of health economics can help students explore novel aspects of health care and ways to approach the issues.

T0140 Seminar (0/1): The objective of this course is to extend graduate students’ knowledge on various research issues related to industrial economics. We invite professional scholars in the field of economics to present papers. Associated with discussion and comments from attendees, we expect that graduate students can learn the latest research methodology, knowledge, and interesting topics.

B1516 Industrial Transformation and Regional Integration (0/2): This class considers closely two major developments in the world economy and their cross impacts; one is the current expanding global IT industry and the other involves regional integration issues and policies. The course concentrates on studying seminal journal papers and relevant case studies.

B0253 Industrial Economics (3/0): This course introduces the general concepts of industrial economics and the basic analysis of a firm's merger behavior.

B0641 Merger Theory and Policy (2/0): We will introduce some merger theory, including horizontal merger and vertical mergers. We will introduce how horizontal mergers as well as vertical mergers affect the market outcomes, and why some mergers are prohibited. We will also investigate how the horizontal and vertical mergers interact with each other.
Ph.D. Program

B0712 Advanced Econometrics (3/0): This course aims at providing the first-year Ph.D. student with a comprehensive coverage of modern econometric methods.

B0981 Advanced Microeconomics (I) (3/0): In this course, we will explore the developing frontier of microeconomics. Participants will select two or more topics they are interested in and present the related materials. Any cross-fertilization ideas are welcome in class. Participants are encouraged to develop their own thinking and perspective on economic issues. Our topics of interest include but are not limited to: Game Theory, Behavior Economics, Experimental Economics, Neuroeconomics, Learning, Agent-Based Computational Economics.

B0982 Advanced Microeconomics (II) (0/3): This course aims to introduce the theoretical foundation of Microeconomics and provide some basic tools for the student to develop a formal treatment of these subjects and apply them to relevant issues. This course mainly covers some fundamental theories on firms' behavior and game theory. We will also include consumer theory if possible.

B0983 Advanced Industrial Economics (I) (3/0): This course aims to teach the students industrial economics, and to develop students' ability to do research. This course includes the following contents: Theoretical Background, Market Structure and Organization, Technology Innovation, and so on.

B0984 Advanced Industrial Economics (II) (0/3): The course will first discuss competitive industry and its relationships to general equilibrium theory and its application to (traditional) trade theory in detail. The course then introduces theory and empirical evidence of price discrimination in monopolistic industries. In addition, with the equilibrium concepts in game theory the course examines oligopoly models and related empirical papers. Finally, the course plans to introduce the identification strategies of econometric methods frequently used in empirical paper.

B0985 Advanced Intermediate Macroeconomics (0/3): This lecture discusses the main mathematical methods of optimization and dynamics in the macroeconomics and the modern growth theory. We will begin with a very thorough introduction of mathematics and discussion of the consumption/saving problem of households, investment behavior of firms and small open economy. We move next to a discussion of endogenous growth models.

M1513 Methods for Economic Analysis (3/0): This course covers mathematical economics and econometrics. First, this course introduces the basic economic theories with mathematical analysis that include comparative static analysis, optimization problems, and dynamic analysis. Next, we learn the theory and application of simple regression analysis in the fields of econometrics, and then we introduce some basic and popular econometric models and tools about time series analysis, panel data models, productivity analysis, and spatial econometric models by using econometric software.

B1488 Topic Studies on Regional Economics (I) (0/3): Economic integration (such as through the WTO, EU, NAFTA, RCEP, and TPP, etc.) plays an important role in the global economy for many reasons. The purpose of this course is to help students understand the WTO, regional integration, and industrial agglomeration through the combination of location theory, international trade, and industrial organization, and by considering specialized WTO and FTA experts.

B1192 Applied Micro-Econometrics (I) (0/3): This course provides an introduction to micro-econometrics, the analysis of individual-level data on the economic behavior of individuals or firms using regression methods applied to cross-sectional and panel data. It will discuss core methods of micro-econometrics, including maximum likelihood method, quantile regression, GMM, and nonparametric and semiparametric methods, and it is not only oriented to theorists but also to the practitioner.

B1518 Agent-Based Computational Economics (0/3): This course will discuss the decision behavior of artificial agents. Based on the assumptions of a behavioral model, we will be able to build a dynamically interactive environment. Free from the assumption of homogeneity and perfect rationality, we will be able to analyze market phenomena based on designed artificially intelligent agents.
DEPARTMENT OF ECONOMICS

Degrees Offered: B.A., M.A.

Chairman: Lin, Yen-Ling (林彥伶)

The Department

The Department of Economics began as a program offering classes in the University’s evening division in 1980, and was established as a department in 1986. Currently, the department has 17 full-time professors. The department offers a four-year program leading to the Bachelor of Arts in Economics.

The department offers theoretical core courses including intermediate microeconomics and macroeconomics, as well as specialized courses in econometrics, money and banking, economic development, financial economics, and labor economics. Students are required to take a minimum of 86 credits of required courses, along with 42 elective credits, in order to graduate. From 2007 on, we have also provided a credit course program by designing a series of economics, finance and law related courses. Students can earn a certificate from the school if they fulfil the requirements of this credit course program.

The department strongly emphasizes research and has a significant number of faculty members conducting projects funded by the National Science Foundation of the R.O.C. The department also holds conferences regularly dealing with the economic problems of Taiwan.

The M.A. program in Economics was established in 2001. Its teaching objectives are to train students to acquire a professional knowledge of Economics and a strong ability for further study and employment. Furthermore, we stimulate students’ enthusiasm and ability for advanced research.

To be consistent with our reform in graduate course structure, the M.A. program in Economics is renamed as The M.A. program in Economics and Finance, Department of Economics beginning in 2017.

Faculty

Professors
Shi-feng Chuang (莊希豐); Huei-chu Liao (廖惠珠); Li-ly Chiang (江莉莉);
Shu-chin Lin (林淑琴); Jhy-hwa Chen (陳智華); Jer-yuh Wan (萬哲鈺);
Yi-chen Lin (林亦珍); Chao-liang Chen (陳炤良)

Associate Professors
Yah-wei Chen (陳亞為); Tun-kung Cheng (鄭東光); Chin-yuan Lin (林金源);
Biing-shiun Yang (楊秉訓); Yi-ye Chen (陳怡宜); Ronald A. Edwards (艾德榮);
Yen-ling Lin (林彥伶)

Assistant Professors
Po-lu Chen (陳柏儒)

Degree Requirements

The Department of Economics offers one program at the undergraduate level (Bachelor of Business) and one program at the graduate level (Master’s). The degree requirements for the programs are as follows:

1. Requirements for a Bachelor in Economics:
   Completion of 128 credits of courses, including 86 credits of required courses and 22 credits of elective economics courses.

2. Requirements for a Master in Economics and Finance:
   Completion of 34 credits of courses, including 12 credits of required courses and 22 credits of elective economics courses offered in the department. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.
Course Descriptions

Undergraduate Courses

B0071 Investment (2/2): This course focuses primarily on investing in marketable securities. It focuses on the investment environment and process.

B0109 Insurance (0/3): This course introduces underlying concepts and principles of insurance, insurance products and contacts, the insurance market, and insurance-finance. To assist students to gain a better understanding of insurance products and market dynamics, and to bring together insurance theories with practices, case studies and current affairs regarding to insurance are reviewed.

B0130 Intermediate Microeconomics (3/3): This course offers an in-depth investigation of the theories of consumers and firms. Special topics in information economics, uncertainty, overlapping models, externalities, and basic game theory are also touched on.

B0202 International Finance (3/0): This course examines the theory of exchange rate determination and international monetary economics. The first semester emphasizes exchange rate theory, while the second semester analyzes monetary union and exchange rate policy.

B0218 Theory of International Trade (0/3): International trade policies are a living discipline, changing and evolving in response to the development of the world’s economies. This course provides a study of international trade and finance and identifies important implications for economic policy.

B0263 Money and Banking (2/2): This course introduces interest rates and foreign exchange rates in the financial market, financial institutions, money supply and demand, and the monetary policy. Students in this course will acquire basic concepts in economics.

B0268 Labor Economics (3/0): This course provides a blend of theoretical and applied research. The main topics include: labor supply, education and training, labor demand, theories and empirical evidence of unemployment, job reallocation, and the effects of globalization and technological change on the labor market.

B0295 Economic Development (0/3): This course examines the basic elements of development and growth. The first semester emphasizes growth theories, while the second semester is devoted to applying these theories to the Taiwanese economy.

B0301 Introduction to Mathematical Economics (2/2): This course presents an introduction to basic mathematical tools for major types of economic analysis such as statics, cooperative static, dynamics, and mathematical programming.

B0302 Economics (2/2): This course covers basic topics of economics: market demand and supply, production and costs, market structure, national income, unemployment and inflation, etc.

B1593 Advanced Economics (1/1): This course provides more advanced concepts and theories of economics: how the market equilibrium works, how consumers and producers make decisions, and how government policies affect economy, fluctuation and growth, etc.

B0370 Environmental Economics (0/3): This course will introduce a variety of approaches to environmental problems. The goals of this course are to structure students’ abilities in economic analysis and to strengthen their applications for current environmental events.

B0373 Intermediate Macroeconomics (3/3): This course approaches the aggregate economics theory with an emphasis on recent developments.

B0453 Financial Economics (2/2): This course provides students with an ability to understand and apply the theories and techniques used in corporate finance.

B0547 Public Economics (2/2): This course provides students with a solid grounding in theory and
teaches students to understand how the public sector interacts with the rest of the economy and why governments act the way they do, enabling them to evaluate policies and their alternatives.

B0556 Applied Econometrics (0/3): This course is a sequence of the principle of econometrics. We will learn how to estimate the model when the fundamental CLRM assumptions are violated. The course also emphasizes the use of econometric software (gretl) to analyze real data.

B0727 Principle of Econometrics (3/0): Econometrics literally means “economic measurement”. It consists of the application of mathematical statistics to economic data to lend empirical support to the models constructed by mathematical economics and to obtain numerical results. It is concerned with the empirical determination of economic laws, which will be discussed in this course.

B0728 Economic Dynamics (2/0): This course focuses on economic dynamic models. Topics include an introduction to dynamic models, integral calculus, economic applications of integrals, the first-order differential equation, and the qualitative-graphic approach.

B0730 Financial Regulation and Law (3/0): This course examines legal approaches to dealing with entrepreneurs’ raising of capital and provides an understanding of the essential elements of financial law. Through this course, it is expected that students will grasp the fundamental legal principles and market practices of securities and exchange law.

B0776 Strategy and Structure (2/2): This is an introductory course to modern industrial organization. It provides the applications of game theory to a firm’s behavior and an industry analysis. It is topic oriented. Major topics include monopoly strategies, predatory strategies, collusive behavior, mergers, vertical restraints, auctions, and R&D, etc.

B0931 Economic History of Taiwan (2/0): This course explores the development process of the Taiwanese economy since the early 15th century. Discussion on Taiwan’s policies and performance in the 1970s and 1980s is also included in the course.

B0933 Economic Decisions under Uncertainty (2/2): This course emphasizes the basic economic theory of uncertainty and information. The first semester considers simplified decision theory, expected utility function, attitudes toward risk, and the state-preference approach. The second semester focuses on issues surrounding portfolio theory, the value of information, asymmetric information, signaling theory, and game theory.

B0934 Advanced Microeconomics (0/3): This course is designed for students who have learned microeconomics and calculus. Hence, the purpose of this course is to discipline students to be capable of using mathematical models for analyzing consumer behavior, firm behavior, and market structures in depth.

B0936 Introduction to Decision Models (2/0): This course focuses on decision models and their application. Topics include AHP, decision criterion, decision trees; risk analysis, sensitivity analysis; utility and decision making. The course also introduces basic Markov chains.

B0937 Guide to Economic Essays and Readings (2/2): This course discusses (in English) important economic concepts in the form of readings and worksheets. The goal is to help students improve their comprehension of economic articles in a practical and useful way.

B1177 The Political Economy of International Relations (0/2): The interaction between economic issues and international politics is emphasized in this course. The conflicts between DC’s and LDC’s and between capitalism and socialism are discussed. The role of the U.S. in the past century is also considered.

B1178 Applications in Programming Problems (0/2): The aim of this course is to understand real life problems and formulate problems in terms of linear programming. With the help of computer software, we can obtain results and be able to explain and extend the results.

B1247 The Case of Intellectual Property Rights (2/0): The current course is based on IPR related cases. The course will focus on issues related to IPR law, and will involve in-depth discussions of basic
legal concepts covered in IPR law.

**B1258 Economic Dynamics and Its Applications (2/0):** This course focuses on economic dynamics and integral calculus. Topics include an introduction to dynamic models, integral calculus, economic applications of integrals; continuous dynamic systems and discrete dynamic systems.

**M0517 Statistics (2/2):** Statistics is the collection of procedures and principles for gathering data and analyzing information in order to help people make decisions when faced with uncertainty. This one-semester course is an introduction to inferential statistics. Topics covered in this course include hypothesis testing, chi-square tests, regression analysis and analysis of variance.

**M0518 Accounting (2/2):** The essential purposes of accounting are to report a company’s financial conditions, operating results, and changes of financial status. This course aims to instruct students in the logic behind accounting, accounting processes, the preparation of financial statements, and key concepts of financial analysis.

**M1194 Law of Consumer Protection (0/2):** This course begins with real cases related to consumers’ rights. It discusses topics closely followed by the general public, such as the purchase of real estate, mailing transactions, credit card contracts, transaction-based conflicts, and fixed-payment loans.

**S0325 Calculus (2/2):** This course examines integration and its applications.

**B0086 Financial Markets (0/2):** In this course, we will introduce the determination of prices or market values of securities that are traded in those markets, the calculation of rates of return or yields for those securities, and the set of tools used by financial institutions to manage the risk of operating in the financial markets.

**B1504 Ancient Chinese Political Economic History (3/0):** This course is a course on ancient Chinese political economic history, covering the 3,000 B.C. to 221 B.C. period. The era covered roughly covers the late-Neolithic period, the Bronze Age and finishes in the Iron Age with the first unification of China. It is a one semester course. The course will cover various aspects of Chinese political economic history. Important economic and military developments as well as major political institutional reforms will be emphasized.

**B0698 History of Chinese Economic Thought (0/2):** This course is intended to provide students with a basic understanding of economic history and economic thoughts in China. Modern economic theories will be related to Chinese history. This course also tries to motivate students to enjoy the study of history.

**B1078 Derivatives (0/2):** It covers the fundamentals of the futures and options markets: (1) The major types of futures and options orders; (2) the principles and practices of futures clearing and margining; (3) a survey of technical and fundamental analysis; (4) an in-depth treatment of hedging; (5) coverage of specific groups commodity and financial futures and options.

**B0154 Financial Statement Analysis (0/2):** This course introduces how to examine the business performance in the past, how to examine the current state of enterprise performance and how to forecast the future of business through the evaluation of financial statements including balance sheet, income statement, statement of changes in owner’s equity and statement of cash flows.

**B1544 Tang-Song Political Economic History (2/0):** This course introduces the social, political and economic developments of the Tang and Song Dynasties; studies the economic development and technological innovation of the late-Tang through Song period; and studies the changes in political institutions from the late-Tang / Five Dynasties—Ten Kingdoms / Song period.

**B1545 Ming-Qing Political Economic History (0/3):** This course introduces the social, political and economic developments of the Ming and Qing Dynasties; studies the economic development and technological innovation of the Ming-Qing period; and studies the changes in political institutions from the early-Ming to late-Qing period.
B1546 Leisure Economics (2/0): This course combines economics theories and empirical analyses to explore the leisure industry, so that students in the department of Economics can understand the development of the leisure industry and experience economic rules on production, consumption, market equilibrium, externalities, and differences in the leisure industry.

B1547 Topics in Market Economy (2/0): This course is designed for senior undergraduate students and aims to provide better understanding of how the economic theory is applied in practice. The presenters in this class are invited experts from different industries. They will share their valuable experience and up-to-date knowledge regarding the market. This class is particularly helpful for students who will enter the job market right after graduation.

B1548 Topics in International Economics and Policy (0/2): This course is offered in English and is designed for those not majoring in economics; however, students should have completed the prerequisites of Principles of Economics. We will discuss political and economic aspects of trade barriers, commercial policy and connections between trade and development, FTAs, WTO and income distribution; understand the debate between economists and people from other fields on free trade; study the causes and consequences of international financial crises.

B1635 Meiji—Early Showa Japanese Political Economic History (0/2): This course covers the political and economic aspects of the Japanese Meiji - early Showa period.

B1636 Pre-1650 English Political Economic History (3/0): This course covers the political and economic aspects of the English pre-1650 period.

B1637 Post-1650 English Political Economic History (0/3): This course covers the political and economic aspects of the English post-1650 period.

B1640 Practicum in Corporate Practice (2/0): This course will help in improving the employability of students by narrowing the gap between study and practice through taking the professional certification exam. This will help students to fully understand the requirement of the enterprise.

B0817 The Application of Excel Financial Tools (2/0): This class will have several lessons about the useful Excel financial tools. The mathematics, operating ways, and practical examples will be taught through the computer screen. Students will have opportunities to practice themselves in the lab.

B0818 The Application of Excel Statistical Tools (0/2): This class will have several lessons concerning the useful Excel statistics tools. The mathematics, operating ways, and practical examples will be taught through the computer screen. Students will have opportunities to practice themselves in the lab.

B1472 Energy Economics (0/2): Beginning from the energy policy in Taiwan, this course introduces many concepts, definitions in the area of energy. Then we focus the demand, supply and related economic theorems of every individual energy such as oil, coal, gas, thermal electricity, nuclear electricity and new & renewable energy (i.e. wind, solar, geothermal, biomass and ocean, etc.). The issues of energy, environment and new technology are also discussed in this course. Those topics include energy and climate change, ETS, CDM, JI, Smart grid and CCS.

M0405 Management (0/3): Management is a course that will introduce functions of management, including planning, organizing, leading, controlling. This course begins with a discussion of the current issues and case method in management. This course is designed to integrate the theories in the area with real world applications to help students to learn these concepts. Students will understand the needs of modern organizations, including emerging national and international trends.

M2400 Sengoku-Tokugawa Japanese Political Economic History (3/0): This course covers the political and economic aspects of the Japanese Warring States—Tokugawa transition.

Master’s Program

B0099 Applied Microeconomics (0/2): This is a topic-oriented course covering advanced applications of microeconomics related to game theoretical analyses. Most of these applications are relevant to the studies of industrial organization or financial economics.
B0118 Applied Macroeconomics (0/2): Following up on the lectures in Macroeconomics Theory, this course further explores more applied subjects, such as open economy issues and economic growth issues through the method of paper readings. It requires students to hand in a term project of empirical research related to macroeconomic policies.

B0129 Microeconomic Theory (3/0): This course focuses on the fundamental tools of microeconomics that will be helpful to all economists, such as utility maximization, labor supply, revealed preferences, profit and cost functions, uncertainty, and general equilibrium.

B0268 Labor Economics (3/0): The aim of this course is to acquaint students with traditional topics in labor economics such as labor supply and demand theories, search models, human capital models, contracts, models of reallocation and cleansing, job creation and downsizing.

B0429 Economic Growth Theory (3/0): The purpose of this course is to introduce the theory and empirical evidence of economic growth around the world. We will discuss academic studies that demonstrate that the most important determinants of economic growth are related to economic policy.

B0668 The Economics of Uncertainty and Information (0/3): This course deals with basic topics of uncertainty and information. In-depth treatments include different approaches to studying economic behavior under uncertainty, consumer theory, producer theory, game theory, asymmetric information, signaling, and search theory. In particular, it focuses on the introduction of classic literature of wide applications.

B0696 Financial Institution Management (0/3): This course introduces the following three issues: (1) the history of the financial industry; (2) how to measure risks; (3) risk management in the financial industry.

B0710 Macroeconomic Theory (3/0): This course uses the market-clearing approach as a general method for analyzing macroeconomic problems. It starts from a simple Ramsey Model before moving to discuss some important issues by adding capital to the model.

B0890 Econometrics (I) (3/0): This course introduces the basic tools for studying econometrics and the regression model in cross-sectional data.

B0891 Mathematics for Economics (3/0): This course studies the mathematics required to solve problems in Economic Analysis. Optimal control theory will then be introduced to solve dynamic optimization problems.

B0892 Econometrics (II) (0/3): This course emphasizes the econometric analysis in time-series and panel data.

B0894 Applied Micro-Econometrics (0/3): This course covers two main topics of applied microeconomics using a variety of econometric techniques as well as non-parametric approaches. One of them introduces how to measure the productivity and efficiency of a decision-making unit. The other addresses the estimation of various probability models, such as probit and logit models and multinomial logic models. On the basis of probability models, the Tobit and truncated regression models will also be discussed.

B0932 Energy Policy and Management (3/0): Focusing on the new trends in international energy development, this course analyzes the problem of each traditional energy: oil, coal, gas, electricity and renewable energy. Several important issues of energy policy, energy and environment, and the climate change resulting from fossil energy use are also arranged in the final part.

B0946 Applied Macro-econometrics (0/3): Introduction to the time series models and a discussion of applications of macroeconomics.

B1173 The Economic Analysis of Social Issues (0/3): This course involves applications of current research, econometric methodology, and historical data to achieve a clear and practical understanding of the economic aspects of important social issues, such as suicide, crime, abortion, immigration,
global warming, de-industrialization, etc.

**B1203 Security Analysis (3/0):** This course is designed to examine the characteristics of individual securities, as well as the theory and practice of optimally combining securities into portfolios.

**B1414 Macrofinance (0/3):** This course provides both theoretical frameworks and econometric methods to analyze macro-finance term structure behavior. As the name suggests the macro-finance approach allows bond yields as well as latent variables representing financial market factors to reflect macro-economic variables. By applying time series econometric methods such as VAR and ECM models, this course introduces how to incorporate the features of both monetary economics and mainstream finance models to obtain a much richer term structure specification.

**B1430 An Introduction to Behavioral Economics (2/0):** Behavioral economics is probably the most important counteraction to orthodox, standard economics of the last two decades. In contrast to standard economics, behavioral economics highlights bounded rationality and the psychological procedure of human decision making. There are significant differences in terms of basic assumptions, methods of inquiry, and consequent results between behavioral economics and standard economics. This course intends to provide a basic overview of this fast-developing, controversial approach.

**B1681 The Theory and Practice of Financial Derivatives (0/2):** This course aims to introduce the investment management process to help students understand theory and practice. It includes the following topics: trading strategies, pricing and arbitrage of futures and options commodities, and the role of derivatives.

**M0905 Thesis Writing (1/0):** This course intends to deconstruct the writing process and teach the fundamentals of thesis writing. Instruction will concentrate primarily on the process of writing scientific manuscripts. The course teaches students how to write effectively, concisely, and clearly.

**T0140 Seminar (0/1):** This course is designed to provide a broader context for knowledge about the field of economics and econometrics. This process explores connections between both (1) oneself and the field of economics, and (2) society and economics.

**M0800 Business Ethics (0/1):** The current course introduces the ethical relationships between the business and the society, and helps students understand the multiple ethical obligations of businesses toward stakeholders inclusive of employees, stockholders, competitors, community, and environment.

**M1933 Financial Management—Case Study (2/0):** The goals of this course are to develop capability in applying theories on capital budgeting, capital structure, dividend policy, corporate governance and risk management, to the problems that arise in the management of a corporation and the valuations of financial and real assets. To get a good grade in this course, you should expect to spend 4 to 6 hours per week on working on assignments and preparing reports.
DEPARTMENT OF BUSINESS ADMINISTRATION

Degrees Offered: B.B.A., M.B.A., EMBA

Chairman: Li-Ren Yang (楊立人)

The Department

The Department of Business Administration currently has three programs, including a bachelor program, an MBA program, and an EMBA program. The bachelor program requires at least 128 credit hours. Undergraduate students must achieve at least a 2.0 grade point average in each course. The MBA program requires at least 39 credit hours. The EMBA program requires at least 36 credit hours. Graduate students must achieve at least a 3.0 grade point average in graduate courses. The bachelor program started in 1966, the MBA program started in 2001, and the EMBA program started in 2003.

The purpose of the bachelor program is to provide students with a broad background in general business and management and to offer them adequate preparation for pursuing graduate study, entering the job markets including banking, management, marketing, human resources, sales, purchasing, information management, manufacturing, and working in government or nonprofit institutions. Based on the undergraduate courses, many advanced and contemporary courses have been provided to graduate students, such as Organization Theory, Research Methodology, Strategic Management, Knowledge Management, Seminars in Business Functions, and Seminars in Industries. A close relationship between the department and the business community generates a mutually beneficial understanding of the needs of business and development. Many educational facets including field trips, experiential learning, case studies, and contact with business executives provide students the opportunity to improve their skills for greater contributions to the industry.

Faculty

Professors
Li-Ren Yang (楊立人); Chu-ching Wang (王居卿); Kun-shan Wu (吳坤山);
Wen-Shiung Lee (李文雄); Mei-Ling Wang (王美伶); Wei-Lun Chang (張瑋倫)

Associate Professors
Man-chin Huang (黃曼琴); Di-ching Pai (白滌清); Ying-cheng Hung (洪英正);
Yueh-hua Lee (李月華); Hui-chiung Lo (羅惠瓊); Mu-fen Zhao (趙慕芬);
Ya-ting Lee (李雅婷); Ching-fen Lee (李青芬); Yun-Huei Lee (李芸蕙);
Hsing-yin Wen (文馨瑩); Yong-Sheng Chang (張雍昇); Chi-Hsiang Chen (陳基祥);
Min-Fen Tu (涂敏芬)

Assistant Professors
Giin-Tarng Ho (何錦堂)

Degree Requirements

The Department of Business Administration right now offers three programs:

1. Requirements for a Bachelor in Business Administration:
   Completion of 128 credits of courses, including 89 credits of required courses and 21 credits of elective management courses is required.

2. Requirements for a Master’s degree in Business Administration:
   Completion of 39 credits of courses, including 10 credits of required courses, is required. Meanwhile there are 4 credits of thesis writing that are not included in graduation credits. Students are also required to submit a written master's thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for an Executive Master’s degree in Business Administration:

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Completion of 36 credits of courses, including 9 credits of required courses, is required. Note that there are 4 credits of thesis writing that are not counted toward overall program credits. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and to pass an oral examination.

Course Descriptions

Undergraduate Courses

**A0764 Introduction to Advertising (0/3):** This course introduces the functions, categorical consumer psychology, media and creative planning of advertising as well as the practical operation of Taiwan’s ad field.

**B0065 Operation Management (3/0):** The purpose of this course is to introduce Operation Management techniques in a variety of management contexts, such as those of manufacturing and service industries. It aims to provide students with an analytical approach to economic problems of planning and controlling employees, materials, and machines.

**B0071 Investments (0/3):** The aim of this course is to help future investors sort out the various investments that are available and to develop the ability to identify the types of securities and assets most appropriate for a given portfolio.

**B0109 Insurance (3/0):** The purpose of this course is to provide basic knowledge of insurance. The content includes principle of insurance, risk evaluation, life insurance and property-liability insurance, etc. The students would have the ability to arrange their insurance policies after this course.

**B0136 Consumer Behavior (0/3):** This course analyzes the nature of consumer behavior, dynamics and patterns, environmental influences, individual differences, psychological processes, consumer and decision-making processes and behavior, and consumer analysis and marketing strategy.

**B0154 Financial Statement Analysis (0/3):** This course provides students with important analytical skills for evaluating and interpreting the financial position of a firm and assessing its future trends. Course content includes analyses of balance sheets, income statements, fund flows, and return on investment. Attention is also given to integrating modern financial concepts such as efficient capital markets, and statistical projection of earning using theories of financial statement analysis.

**B0173 Commercial Law (0/3):** This course examines company laws, check laws and related business laws.

**B0196 International Marketing Management (2/0):** This course covers issues on the contemporary environment, problems and practices of international marketing. Students learn practical knowledge related to global marketing strategies, as well as Taiwanese businesses, product policies, exhibitions, credit information, and CETDC operations.

**B0260 Organization Behavior (3/0):** This course analyzes current concepts of human behavior as applied to the organization. Topics include anthropological, psychological, and sociological approaches to identifying and solving human aspects of business decisions. Class presentations involve using OB concepts for developing and improving interpersonal skills.

**B0302 Economics (2/2):** This course covers two main topics: (A) The microeconomic economy, including the price and theory of supply and demand, analysis of consumer acts, theory of production, structure of cost, market structure, and the supply and demand of production factors; and (B) Macroeconomics as the study of national income and the determination of rules for greater income equality.

**B0558 International Human Resource Management (0/2):** This course focuses on the connection between corporate strategies and the effective management of human resources, which may require differing policies across countries. The course is based on the notion that competitive companies and economies require appropriate structures, policies, and strategies for managing their employees.
Students will learn about the field of international human resource management and understand its relevance in work organizations.

**B1366 Wealth Management (0/2):** The course provides related knowledge and information about security investment and financial planning. The contents include essentials of financial planning, the preparation and analysis of family financial statements, cash flows management, time value of money, housing planning, child raising and education planning, retirement planning, investment planning, tax planning, and multi financial planning.

**D0331 Practicum in Business (2/0):** This course is designed to benefit both students and employers in the local area. The practicum can be an extremely valuable experience for students, as it provides students the opportunity to gain practical business experience not normally accessible in a classroom setting. This practical experience provides contacts and networking opportunities to assist in securing future employment. Employers benefit as a result of having available, dependable, conscientious and knowledgeable students who can benefit the organization.

**M0001 Retail Management (3/0):** The purposes of this course are to let students understand various issues related to Retailing Management and current status of Retailing Industry.

**M0003 Human Resource Management (0/3):** This course provides a comprehensive overview of HRM from an upper management perspective. Topics covered include strategic human resource planning, development of human resources, staffing for long-range performance, appraisal, compensation, and labor relations.

**M0015 Human Relations (0/3):** The purpose of this course is to show how you can become more effective in your work and personal life through knowledge of and skills in human relations.

**M0086 Introduction to Business (3/0):** This is an introductory course designed for both business and non-business majors. By taking this course, students will learn key concepts and disciplines of business and its environment, management and organization, people and production, marketing, finance, risk management, and multinational business.

**M0136 Practice of Planning (0/2):** Planning is a primary element of management. In the process of planning, practical experience trumps theoretical knowledge. This course will introduce knowledge of the planning process that can be applied both to the individual and the organization.

**M0142 Marketing Management (3/0):** This is an analytical, managerial-oriented course emphasizing decision-making in the functional area of marketing. Course content includes analyzing marketing opportunities, researching and selecting target markets, developing marketing strategies, planning marketing programs and organizing, implementing and managing marketing initiatives.

**M0271 Financial Management (3/0):** This course analyzes the underlying theory, principles and techniques used in financial management to maximize the value of the firm. Topics explored include discounted cash flow analysis, risk and return measurement, capital budgeting, the cost of capital, capital structure theory and leverage policy, dividend policy, long-term financing policy, working capital management, financial statement analysis, mergers, holding companies, and multinational financial management.

**M0344 Data Processing (2/2):** This course is designed to introduce concepts, software, and applications related to data processing.

**M0348 Management Information System (0/3):** This course teaches students about the emerging role of information systems in business. It covers people, organizations and management, information technology concepts, MIS in practice, building management information systems, and MIS management.

**M0375 Management Psychology (3/0):** This course is the first in a series of human-oriented courses that introduce students to the principles of managing people. In this course, learners will learn basic organizational theories, group dynamics, motivation, leadership, individual differences and so on. All
students need to be aware of how people behave in order to be able to provide the best working environment. This course will teach students the basics of human organizational behavior, as well as establishing a framework for further managerial studies.

M0382 Management Science (0/3): This course provides quantitative methods of management science with applications to economic, industrial and managerial problems. Topics covered include linear algebra, mathematical programming, decision-making under risk, inventory control, queuing theory, game theory, and simulation.

M0405 Management (0/3): The course offers students not only theories that guide managerial activities but also illustrations and examples of how and when those theories do and do not work in both small and large businesses as well as in nonprofit organizations.

M0477 Quality Management (0/3): This course provides comprehensive coverage of quality management concepts. Topics covered include quality-improvement techniques, control chart sampling plan systems, quality costs, and total quality management.

M0495 Sales Promotion Marketing (0/3): This course explores promotion management, which is one of the four Ps (marketing mix) that deal with integrated marketing communication (IMC), promotion tactics, advertising effects, and pricing management.

M0496 Service Marketing (0/2): This course focuses on the service sector to introduce means of marketing services effectively. Course content consists of understanding services, tools for service marketers, challenges for management, and formulation of strategies.

M0506 Small and Medium Size Enterprise Management (3/0): This course is designed for facilitating each student to develop his/her managerial capabilities in both theoretical and practical aspects. Accordingly, in addition to a mid-term exam, a team term-project integrating industrial analysis and executive interview is also required.

M0517 Statistics (2/2): This course teaches basic concepts of statistical methods including the probabilistic model, statistical inferences, hypothesis testing, linear regression model, time series, analysis of variance, and so on.

M0518 Accounting (2/2): This course offers an introduction to financial accounting, including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses, and cash flows. Students will be exposed to the procedures and practices involved in recording and processing economic transactions in an accounting information system.

M0747 Strategic Management (3/0): This course teaches students skills on how to deal with complex problems confronting managers in a rapidly changing environment. Topics covered include strategic management processes, corporate level strategic decisions, business level strategic decisions, functional level strategic decisions, and strategy implementation and control.

M0800 Business Ethics (2/0): This course introduces the ethical relationships between business and society, and helps students understand the multi-ethical obligations that businesses have to stakeholders, employees, stockholders, competitors, the wider community, and the environment.

M0853 Electronic Commerce (e-Business & m-Business) (3/0): This course will cover the concepts, tools, and strategies for understanding and exploiting opportunities associated with e-Business (m-Commerce). The focus will be on applications and marketing aspects of business.

M1087 Enterprise Resource Planning (2/0): Enterprise Resource Planning (ERP) is a way to integrate the data and processes of an organization into one single system. This course aims to teach ERP and e-Business, and to explain concepts related to the ERP, its scope and system development process, which enables students to better understand the ERP system. It also aims to train students to successfully implement ERP in the context of local enterprises. Course content includes: information communication technology, supply chain management, enterprise resource planning, customer relationship management, knowledge management, electronic commerce, business intelligence, etc. The course comprises the following sections: (1) an introduction to business flow management and
ERP; (2) a basic introduction to SCM and introduction to ERP modules; (3) steps for implementing ERP and Key Success Factors for Implementing ERP; (4) evaluation of ERP.

M1104 Supply Chain Management (3/0): In this course, students will learn concepts related to the design, evaluation, and performance of supply chain systems developed through an exploration of contemporary practice and research, focusing on current modeling approaches, analytical frameworks, and case studies.

M1105 Internet Marketing (2/0): Through theoretical investigation, brainstorming, and case analysis, students develop skills and strategies necessary for effective marketing via electronic media.

M1856 Market Survey and Forecasting (3/0): The purpose of this course is to nurture students’ basic understanding of market surveys and to develop students’ abilities in decision making and data analysis.

M1859 Seminar on Technology and Service Management (0/2): This seminar integrates theories with practical skills. In this subject, we hope to help senior students gain an awareness of the latest knowledge and practices in business through speeches delivered by managers in different industries to provide students with preparation for their future careers.

M1868 Cost Analysis and Management (0/3): This course intends to enhance students’ ability to understand and analyze cost/expense in order to make related managerial decisions.

M1931 Seminar in Management Information (0/2): Seminar in Management Information is a study on exploring information technology systems and the development of e-commerce. It covers the following topics: corporation network system framework, competitive advantages of information technology, introduction to communication and internet, general introduction to e-commerce. In addition to network management theories, practical examples as well as e-commerce related network management will also be presented in this course in order to assist students in building up their ability in information technology applications.

M2000 Performance Management (2/0): This course introduces theories and practices of performance management, including performance management theories, performance management information, performance management tools, and performance management practices.

M2018 Customer Relationship Management (2/0): Customer relationship management is an important issue for enterprises nowadays. According to the 80/20 rule, 80% of profit is created by 20% of key persons of firms. Therefore, retaining significant customers is extremely crucial for companies. This course aims to investigate management and technology concepts. Meanwhile, several cases will be used to link related theories. The goal of this course is to help students obtain an overall view of CRM.

M2021 Theory and Practice of Life Insurance (0/2): This course introduces types of life insurance, clauses, pricing, underwriting, claims, and marketing and operation. It also helps students not only understand the theory of life insurance, but also its operation.

M2023 Advanced Practice in the Biotechnology Industry (0/2): This course teaches students to learn the Six Key Emerging Industries and help them to know the future business trend and management style in the Six Industries.

M2205 Asia-Pacific Industrial Competitiveness Analysis (3/0): This course includes economic and trade issues covered from the Asia-Pacific region as a whole, and a general description of individual countries on an in-depth analysis, and using the easy way to introduce the complicate issues. This course also analyzes the Asia-Pacific regional economic and trade information, furthermore, gathers the latest case of Taiwanese businessman and companies in the Asia-Pacific region, by using text and graphics in conveying the message of the regional economic and trade information to readers, and these cases will deepen student learning.
S0325 Calculus (2/2): This course covers basic concepts of limits, differentiation, integration, integration of functions of one variable, infinite series, functions of several variables, partial derivatives, and multiple integrals.

T0086 Technology Management (0/3): The management of technology is an issue that faces all firms today. The waves for change in business environment include new technologies and innovation that force industries and firms to find new ways to compete and to survive. This course will be the definition of science, technology and innovation beginning from the value of imported technology management issues, including technology strategy, innovation process, the application of information networks, technology transfer and global competitiveness.

Master’s Program

B0070 Investment Management (0/2): The purpose of this course is to introduce knowledge related to investment, including investment environments and financial instruments.

B0260 Organizational Behavior (3/0): This subject “Organizational Behavior” (OB) is the study and application of knowledge about how individuals and groups act in organizations. It does this by taking a systematic approach. That is, it interprets people-organization-environment relationships in terms of the whole person, group, organization, and the social system. Its purpose is to build up better relationships and excellent performance in order to achieve human objectives, organizational objectives, and social objectives.

B0400 Marketing Research (0/2): Marketing research is the systematic and objective planning, gathering, recording and analyzing of information to enhance the decision making of marketing managers. It helps businesses to stay in close touch with consumers’ needs and wants and to make fine quality marketing decisions.

E1136 Research Methodology (0/3): This course is designed to provide students with an understanding of the theoretical and methodological principles in which business research is broadly based. Upon completion of the course, students will have the knowledge to enable them to propose and format a research project, and will have mastered basic data input and analysis on computers.

M0144 Seminar in Marketing Management (3/0): This course expects students to develop a high threshold for ambiguity—an essential trait for all successful general managers. Students will learn that there are no right or wrong answers to marketing problems; just some that are better than others. Students will learn to approach complex and unstructured marketing problems in a creative and measured way.

M0272 Seminar in Financial Management (0/3): This course includes an introduction to the financial environment, value and risk, capital budgeting, capital structure, and working capital management.

M0286 Project Management (0/3): This course introduces the fundamental concepts and elements of project management. The course also exposes students to various control aspects of a project, such as requirement management, request for proposal, project proposal, scheduling, project-based organization, cost control, and resource management. Students are expected to gain the knowledge and skills in managing projects that are necessary for seeking employment opportunities.

M0476 Organization Theory and Management (3/0): This subject is the study and application of knowledge about how to operate organizations. It does this by taking a systematic approach. That is, it interprets the history of management, multi-dimensions of an organization and the theory of managing trans-organization. Its purpose is to build up the understanding, research and analysis ability, and practical application in this professional discipline for students of the graduate program.

M0477 Quality Management (0/2): This course introduces some basic concepts and methods of quality management. Topics covered include definition of quality, total quality management, quality-improvement techniques, control charts, sampling plan systems, quality costs, and six sigma management.
M0747 Strategic Management (0/3): Strategic management is an integrated discipline, and is also a major course for MBA students. This course emphasizes both top down and micro / macro perspectives; that is, it will analyze the impact of external environments and internal capabilities, which will help the formulation of corporate and business strategies. Some contemporary issues will also be explored such as innovation, M&A, strategic alliance and integration strategies.

M0801 Human Resource Management (0/3): This course discusses typical functions in human resource management from a strategic perspective, such as recruitment, selection, performance appraisal, training, rewarding, and so on. Specifically, it explores how these functions integrate with the overall strategy of the firm in order for the firm to become more competitive.

M0853 Electronic Commerce (0/2): This comprehensive, market-leading text emphasizes the three major driving forces behind E-commerce—technology change, business development, and social issues—to provide a coherent conceptual framework for understanding the field.

M0905 Thesis Writing (0/2): This course introduces the fundamental concepts and elements of thesis writing, dissertation and long essays. The course also exposes students to various aspects of research and provides a comprehensive guide to manage research projects. Students are expected to gain knowledge and skills in conducting research and writing research papers.

M0990 Information Management Seminar (0/3): The rapid advancement of information technology (IT) has affected every bit of our life, both at home and at work. In the workplace, organizations have undergone fundamental changes since the computer was first introduced more than half a century ago. This course will offer a background on the development of IT, the implications of changes to IT application and management, and organizational methods for managing IT. The focus will be placed on how the current models of IT application and management that are being usurped by new models of IT, allowing companies to gain a competitive advantage and manage IT within the enterprise.

M1104 Supply Chain Management (0/2): In this course, students will learn concepts related to the design, evaluation, and performance of supply chain systems, developed through an exploration of contemporary practice and research, focusing on current modeling approaches, analytical frameworks, and case studies.

M1160 Japanese Culture and Management (0/2): This course provides opportunities for students to understand the Japanese behavior from the perspectives of history, geography, culture and society. Emphasis is on the study of norm shaping and managerial applications.

M1214 Chinese Small and Medium Enterprises (3/0): The development of contemporary Taiwanese society has been greatly influenced by the boom in small and medium enterprises over the past decades. This course analyzes various factors causing the positive or negative development of small and medium enterprise in the future.

M1280 Static Application and Data Analysis (2/0): This course introduces the fundamental concepts and application of statistics. The course also exposes students to various aspects of research and provides a comprehensive guide to manage research projects. Students are expected to gain the knowledge and skills in conducting research.

M1301 Study of High-Technology Industries (3/0): This course primarily focuses on the characteristics of the high-tech environment and the marketing challenges those characteristics pose. It focuses primarily on the marketing of technology and innovation, but also addresses the key high-tech industries in Taiwan.

M1356 Services Management (2/0): Service management is a field of study that embraces all service industries. This course examines service management from the perspectives of operations, strategy, and information technology. Course topics includes service quality, service strategy, service development, service location, service encounter, internet service, service supply chain management, and service project management.
M1360 Seminar on Technology Management (3/0): This course is focused on the management of innovation and technology. Topics covered include: fundamentals, strategizing, implementation and globalization of innovation management. In addition, this course is structured along three themes: entrepreneurship and venture creation, knowledge management, and multi-actor innovation.

M1361 Brand Management (2/0): This course provides a comprehensive and up-to-date treatment of the subjects of brands, brand equity, and strategic brand management. An important goal of the subject is to provide managers with concepts and techniques to improve the long-term profitability of their brand strategies.

M1805 Seminar in Operation Management (3/0): This course is designed to develop a substantial understanding of Operations Management for EMBA students. Generally, the purpose of this course is applied and fundamentals of the Operations Management. This is an applied course in which students will obtain experience by solving problems involving real world cases.

M1933 Financial Management—Case Studies (0/2): Financial management focus on the case study of financial management. Through case study, the class analyzes the financial performance and enhances its financial operation ability.

M2060 Innovation and Entrepreneurship Management (0/2): The purpose of the course is to introduce the concept of innovation and entrepreneurship via literature, interactive discussion and business visiting so as to inspire students’ concern for innovation and entrepreneurship and enhance students’ ability to start a new business with innovation.

M0849 Seminar on the Practice of Management (3/0): The purpose of this course is to help students understand different streams of management theory and their application.

M1628 Advanced Knowledge Management (3/0): Knowledge plays an important role for operation and competitive advantage. Knowledge management is always the significant issue for organizations. This course uses cases to illustrate the concepts of knowledge management in practice. Students need to learn the ability to analyze cases and the successful factors that are related to theories.

EMBA Master’s Program

M1805 Seminar in Operation Management (3/0): This course is designed to develop a substantial understanding of Operations Management for EMBA students. Generally, the purpose of this course is applied and fundamentals of the Operations Management. This is an applied course in which students will obtain experience by solving problems involving real world cases.

M1496 Study to Multinational Management (3/0): Two topics—international environment and international operations management—will be included in this course. After finishing this course, the students will be able to understand those topics clearly and then enhance their ability to respond to the rapid change of international environments through the analysis of theories and discussion of case studies. The major contents in this course include related theories, environments analysis, entry strategies, organizational design, and operational management.

M0144 Seminar in Marketing Management (3/0): Marketing-oriented thinking is a necessity in today’s competitive world. This course aims to enhance students’ knowledge about how to carefully analyze needs, identify opportunities, and create value-laden offers for target customer groups that competitors can’t match.

M0375 Management Psychology (3/0): This subject “Management Psychology” is the study and application of knowledge about how individuals and groups act in organizations and commerce environment. It does this by taking a systematic approach. That is, it interprets people-organization-environment relationships in terms of the whole person, group, organization, and the industry system. Its purpose is to build up effective individual, better relationships and excellent performance by achieving human objectives, organizational objectives, and social objectives.
M0990 Information Management Seminar (3/0): Understanding how to create the competitive advantages through information technology, and sharing the practices and experiences with each other via community platform (such as Facebook).

M1366 Study of Service Management (3/0): This subject “Study of Service Management” is the study and application of knowledge about how to manage in the service industry and service system. We hope to increase the ability of EMBA students for reading papers and analyzing concepts. We do this by taking a systematic approach with case study, business visiting and agenda speech in order to make the integration of learning and application.

M1611 Special Topics on Management (3/0): The contents of this course are mainly based on the management function--planning, organizing, motivating, leading and controlling. This course may be regarded as the most important basic course, which not only can test the usefulness and value for the experienced students (particularly for the students who do not have a business and management background), but be used as the common management and thinking logic in the class. Multiple methods will be used in this course including lecture, presentation, discussion, and written report.

B0136 Consumer Behavior (0/3): The purpose of this course is to introduce consumer behavior theory and practice. Major contents include the following: describing consumer decision process model, understanding the major psychological processes of the marketing program, understanding how consumers make purchasing decisions, and learning how marketers analyze consumer decision making.

B0414 Topics on Investment Management (0/3): The purpose of this course is to introduce knowledge of investment, including the investment environment and financial instruments.

M0801 Human Resource Management (0/3): This course introduces human resource management functions, including attracting, training and maintaining talent. And help students learn the method to increase human capital for an organization. From reading and evaluating papers, we can help students to write their own paper.

M0272 Seminar in Financial Management (0/3): Introduction of financial management capital asset market pricing, stock valuation, future option bond, dividend policy financial analysis, M&A.

M0610 Seminar in Strategic Management (0/3): Based on 30-years of corporate working experiences, the instructor will guide students and lead discussions for many case studies from the “Strategic Management” perspectives.

M1214 Study of Chinese Small and Medium Enterprises (0/3): This course demonstrates the functions of S-M business and the developmental & running strategies of S-M business.

M1361 Brand Management (0/3): This course deals with brands, why they are important, what they represent to consumers, what firms should do to manage them properly, and how to create and nurture a strong brand over time. Attendees will learn a comprehensive and up-to-date treatment of the subjects of brands—the design and implementation of marketing programs and activities to build, measure, and manage brand equity.

B0032 Marketing Survey (0/3): The course introduces the theory and application of marketing research, and statistical packages (SPSS) for modeling the solutions to real business problems. By the end of the semester, students should be able to model real case of marketing survey (or their theses) mathematically and explain the results exactly.
DEPARTMENT OF ACCOUNTING

Degrees Offered: B.S., M.A., EMBA

Chairman: Sin-hui Yen (顔信輝)

The Department

The day school of the Department of Accounting was inaugurated in 1973 and the evening school in 1975. The department aims to train students to be accounting specialists both in theory and practice. The scholarship each year amounts to NT $700,000, and is awarded to students with special achievements in six categories: academic achievement, financial need, service, morality, and major courses.

The MA and EMBA programs of the department were established in 1994 and 2000 respectively. Their objectives and directions are as follows: (1) to cultivate senior accounting specialists, emphasizing the combination of theory and practice; (2) to study the accounting system of Mainland China as a social requirement in facing communication across the Taiwan Strait; and (3) to train international accounting specialists for national needs in foreign investment policy.

The department provides research and development funds to encourage students to attend conferences, present research papers, go abroad for short periods of research, invite outstanding scholars and specialists, and improve department facilities.

Faculty

Professors
Sin-Hui Yen (顏信輝); Bao-Guang Chang (張寶光); Lo-Pin Kuo (郭樂平);
Ku-Jun Lin (林谷峻)

Associate Professors
Jui-Chih Chen (陳叡智); Fan-Hua Kung (孔繁華); Chen-Chin Wang (王貞靜);
Yu-Hui Fang (方郁惠); Hsin-Wen Han (韓幸紋); Wei-ju Chen (陳薇如);
Yu-Shan Chang (張瑀珊); Yi-Hua Hsieh (謝宜樺); Hsu, Chih-shun (徐志順)

Assistant Professors
Ya-Chi Chang (張雅淇); Hsuan-Pin Wang (王炫斌)

Degree Requirements

The Department of Accounting offers two programs at the undergraduate level and two programs at postgraduate level.

1. Requirements for a B.A. degree in Accounting:
   Completion of 128 credits of courses, including 89 credits of required courses and 20 credits of elective accounting courses.

2. Requirements for a B.A. degree in Accounting (Advanced education):
   Completion of 128 credits of courses, including 89 credits of required courses and 20 credits of elective accounting courses.

3. Requirements for an M.A. degree in Accounting:
   Completion of 39 credits of courses, including 10 credits of required courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for an EMBA degree in Accounting:
   Completion of 36 credits of courses, including 9 credits of required courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.
Course Descriptions

Undergraduate Program

B0013 Company Law (2/0): This course is for one semester and includes general provisions, limited companies, and companies limited by shares in the Company Act. The goal for this class is for all students to understand the recent development and the regulations of corporation law and practice. We would like to introduce some corporation regulations and practice that used to be applied in related examinations.

B0033 Essentials of Civil Law (2/2): This course discusses basic principles of civil law. Civil law aims to settle disputes between private parties. In first semester, the course will cover some general principles including Application Rules, Persons, Things and Juridical Acts. In second semester, the course will focus on two topics: Family Law and Succession Law. Family Law includes Marriage, Parents and Children, Guardianship and Maintenance. Succession Law includes Heirs to Property, Succession to Property and Wills.

B0061 Marketing (0/2): Participants, through textbooks and discussions, are expected to familiarize themselves with: (1) Introducing of marketing mix, i.e., the 4Ps (Product, Price, Place, Promotion); (2) presenting basic marketing ideas and the components of a marketing plan; (3) discussing the contemporary marketing thoughts and the future trends of marketing.

B0071 Investments (0/3): The objective of this course is to provide students a basic understanding of modern investment theory and practice.

B0146 Public Finance (0/3): This course is designed to study the economics of government: how public choices are made, basics of taxation and government spending. The course discusses theoretical aspects of expenditure and budget economics, and also looks into the tools of tax analysis including tax equity, tax incidence, different taxes, economic effects of taxes, and tax-structure and its reforms.

B0153 Financial Statements Analysis (2/0): This course is designed to help students to utilize the theoretical concepts of accounting and financial tools to analyze the value of business through financial statements. The course covers business analysis, valuation tools, and valuation application.

B0154 Finance Statement Analysis (0/3): This course intends to enhance students’ ability to analyze financial statements. As financial statements are important communication tools used by both investors and firms, the knowledge taught in this course is essential for students’ future careers.

B0173 Commercial Law (2/0): Company Act mainly discusses the class and organization of companies; the right and liability of the board of directors, the managerial officer, and supervisor; the right of shareholders and shareholders’ meeting; and company governance. Negotiable Instruments Act illustrates a bill of exchange, a promissory note and a check, as well as the liability of the drawer and the endorser. Business Entity Act discusses about the legal problem confronted by a certified accountant.

B0260 Organizational Behavior (0/2): The main topics covered in this course are organizational behavior, the behavior of individuals, the behavior of groups, and organization systems.

B0302 Economics (2/2): This course of principles of economics covers the basic economic theories and relevant issues in the fields of microeconomics and macroeconomics. The topics discussed in the sequence of microeconomics include demand and supply, consumption theory, production cost, the structures of various markets, welfare and efficiency. On the other hand, the topics discussed in the sequence of macroeconomics include national income, general prices, unemployment, macroeconomic modeling, macroeconomic policies, money, financial intermediaries, economic growth, and so on.

B0433 Securities and Exchange Law (0/2): Introduction to Securities and Exchange Law and the related regulations in our country.

B0560 Theory of Advanced Accounting (3/0): This course will introduce some important issues of financial accounting including “accounting under ideal conditions,” “the decision usefulness approach
to financial reporting,” “efficient securities markets,” “the information and measurement approach to
decision usefulness,” “economic consequences and positive accounting theory,” “executive
compensation,” “earnings management,” and “standard setting: economic and political issues.”

B0565 Advanced Management Accounting (3/0): To introduce issues in management accounting,
including balanced scorecard, knowledge management, corporate governance, managerial strategy,
social responsibilities and environment accounting. Cases from practical world are also discussed in
this class to help understanding the theory.

B0779 Tax Planning (2/0): The aim of this course is to understand the basic concept and main
principles of taxation law. Also, the subjects discussed in this course include Individual Income Tax,
Alternative Minimum Tax, Estate and Gift Tax, Property Tax, etc.

B1028 Seminar on Financial Accounting Research (0/3): The main objective of this course is to
expose master-level accounting students to ongoing and emerging financial accounting issues, and to
acquaint them with various research methodologies used in empirical financial accounting research.

B1039 Corporate Governance (0/2): This course provides an overview of the importance of corporate
governance. It presents students with an in-depth look at the corporations and the governance
mechanism. The first section will be devoted to a discussion of the integrated system of corporate
governance. The second section will focus on real-world cases to further students’ understanding.

E1034 Introduction to Computers (0/2): The course is designed for freshmen, not only to enhance
their computer knowledge, including programming, network management, network communications,
multimedia, video graphics and others, but also to improve their abilities for obtaining desired
information from Internet. At the same time, related topics, like e-commerce, computer virus and
information security, are introduced such that students can have enough skills for further investigating
and learning more advanced techniques or applications. Finally, students can apply those abilities and
skills to their daily life.

M0032 Tax Accounting (2/0): The essence of the tax accounting course is how to handle profit-
seeking enterprise Income Tax returns. The curriculum uses financial accounting reports as the
foundation. Students will understand finance accounting and tax accounting. When handling profit-
seeking enterprise Income Tax returns, they can make legitimate and correct account adjustments. This
specialized knowledge will be indispensable to students.

M0142 Marketing Management (3/0): This course introduces the fundamental concepts of marketing
management. In addition, this course introduces and analyzes the application of marketing strategies.
Students will improve their ability to develop effective marketing strategies.

M0204 Government Accounting (0/3): Introduces the theory and practice of Governmental
Accounting, lets students have a better link with studying for civil servant’s testing, and working in
government.

M0271 Financial Management (3/0): The essential purpose of this course is to lead students to
understand major concepts of corporate finance: how to engage long-term investments, how to raise
necessary investment funds from possible sources, and how to manage daily operating financial
activities. Students are required to search for possible financial practice issues and solutions through
designated assignments.

M0321 Taxation Law (3/0): This course discusses the basic concepts and main principles of tax law.
Also, the subjects discussed in this course include Tax Administration, Income Tax (Individual Income
Tax and Profit-Seeking Enterprise Income Tax), Estate and Gift Tax, Business Tax (Value-Added and
Non-Value-Added Business Tax), International Taxation and Tax Planning, etc.

M0335 Accounting Information Systems (3/0): This course introduces the theories, applications and
controls of an accounting information system to help students understand 5 transaction cycles.

M0337 Seminar in Accounting Practices (0/2): This course will invite CEO, CFO and governmental
officers to give a speech to students every week. The speakers will share the important practical
issues about management and accounting, as well as their valuable knowledge and experience about accountants’ career to students.

M0338 Accounting Law and Regulation (2/0): Governmental Accounting & Auditing Laws and Regulations (Governmental Budgeting Laws and Regulations; Governmental Accounting Laws and Regulations; Governmental Final Report Laws and Regulations; Governmental Auditing Laws and Regulations).

M0339 Accounting (4/0): The main purpose of this course is to introduce the basic framework and practice of Financial Accounting. We will introduce the primary forms of business organization, accounting cycle, merchandising operation, internal control, and accounts receivable. Further, students can prepare and understand financial statement reports, then analyze a company’s financial structure.

M0340 Accounting II (4/4): This is the further expanding course to a student who has completed Accounting I. The course, in compliance with IFRS, aims at intermediate topics on IFRS Standard-setting environment and the Conceptual Framework for Financial Accounting, Presentation of Financial Statements, Accounting for Inventories, Property, Plant and Equipment, and Intangible Assets. It is designed to extend a student’s knowledge of accounting measurement, recognition and reporting, and to improve his or her ability in analyzing the accounting issues concerned.

M0341 Accounting III (3/3): This course focuses on the concepts and rationale underlying the accounting principles and procedures. The contents discussed in the class include business combination, the equity cost methods of accounting for investment, and consolidated financial statements.

M0400 Management Information Systems (3/0): To understand the role and issues of information and information technology in business and society, and how information technology can be exploited in organizations to achieve competitiveness or effectiveness with a managerial and organizational focus.

M0414 Auditing (0/3): This course introduces the basic theories and methods of auditing in a systematic way. The goals of this course include understanding the conceptual framework of auditing standards, developing the basic capacity of practical operations, and strengthening the ability to evaluate auditing evidence.

M0517 Statistics (2/2): The course includes the inference of the fundamental statistics and the analysis of data. The fundamental inference of statistics and application of statistics will be described in the spring semester. In addition, the application and analysis of large samples, two treatments, regression analysis, analysis of categorical data, and analysis variance (ANOVA) will be elaborated in the spring semester.

M0518 Accounting (2/2): The main purpose of this course is to introduce basic framework and practice of Financial Accounting. We will introduce the primary forms of business organization, accounting cycle, merchandising operation, internal control, and accounts receivable. Further, students can prepare and understand financial statement reports, then analyze a company’s financial structure.

M0800 Business Ethics (0/2): This course is concerned with the concepts of social responsibilities and business ethics. Through case studies, students develop a sense of professionally ethical conduct, as well as learning sound criteria to make professional judgments.

M0853 Electronic Commerce (2/0): This course introduces the concept of electronic commerce, including business model, strategy, marketing, branding, CRM, and mobile commerce issues. The practice cases also need to read by students to deeply understand the effects of e-commerce on business consumers.

M0863 Learning in University (1/0): The course aims to help students to have the basic knowledge and skills for being university students, and have better understanding of their own learning styles, learning, emotion, career, and social.

M0997 Introduction to Derivatives (2/0): This course will introduce many derivatives including forward, future, option, and swap. We will help students to understand the characteristics of various
derivatives, and the empirical practice.

M1078 Research on Statements of Financial Accounting Standards (0/3): This course will give lectures to students on International Financial Reporting Standard.

M1148 Cost and Management Accounting (1/1): Cost and management accounting includes cost determination, cost control and planning, and how to help managers to make decisions. The discussions of this course involve multiple dimensions, information and international environment, and focus on corporate ethics and managers’ behavior.

M1276 Application of Computer Auditing Package Software (0/3): This course teaches students a famous general auditing computer tool, ACL, to help students to understand the various tests used in the auditing practices and auditing procedures. We welcome students who are planning to work in the big CPA firms, the internal audit department of big companies, or the National Audit Office to participate in this course.

M1853 Seminar in Auditing Practices (2/0): This course provides the knowledge of CPA firms’ and governmental auditing practice, including the big 4 and non-big 4 CPA firms. We will invite the excellent CPAs as the speakers to explain the auditing practice to our students.

M1854 Business Entity Accounting Act (2/0): This course uses a heuristic, problem-based and team work teaching method to learn the Business Entity Accounting Act in the game.

M1863 Case Study of Managerial Accounting (2/0): This course extends the course of cost and management accounting, teaching students analytical and decision capabilities, strengthening defense ability, and focusing on accounting ethics and team corporation.

M1957 Financial Practices (2/0): This course discusses the operations of CPA firms’ and governmental auditing practice, including the big four and non-big four CPA firms. We will invite distinguished CPAs as speakers to explain auditing practices to our students.

M1958 Seminar in Auditing Practices (2/0): This course provides the knowledge of CPA firms’ and governmental auditing practice, including the big 4 and non-big 4 CPA firms. We will invite the excellent CPAs as the speakers to explain the auditing practice to our students.

M1969 Consultation Service for Filing Income Taxes (0/1): The aim of this course is through participation in personal income tax service and consulting processes to strengthen the actual ability of tax application for the students. Also, students could be experts in consulting for personal income tax. Through participation in the process of filing service, students can learn the correct and positive working attitude. At the same time, they, by service-learning, could enhance their ability for interaction with others.

M2001 Accounting Ethics (0/3): The course aims for students at understanding the conceptual context of accounting ethics and social responsibility. Through the ethical dilemma study, the students are expected to develop the sense of professional ethical conduct as an accountant and criteria used in professional judgments. The students are also expected to understand corporate social responsibility and to behave ethically in their future business acts, so as to help their businesses or organizations act as a good “corporate citizen.”

M2107 Accounting for SMES (0/3): This course will lecture students on the contents of IFRS for SME.

M2157 Enterprise Resource Planning—Financial Accounting Module (0/3): This course uses an accounting commercial application to help students to understand bookkeeping practices.

M2158 Accounting Certification Exam Preparation (I) (3/0): The main purpose of this course is to assist students in acquiring an accounting license. We will introduce concepts and exercises of accounting and taxes.

M2159 Accounting Certification Exam Preparation (II) (0/3): The purpose of this review course is
to acquaint students with the skills and knowledge necessary for passing the CPA examination and civil services examination. This review course mainly covers Auditing and Attestation and Advance Accounting courses. It helps students pass the qualifications needed to have a successful accounting career.

M2168 Service-Learning in Accounting (1) (1/0): The TKU Accounting Department cooperates with Tzu Chi Foundation in providing this course. Tzu Chi Foundation Members will share their experience about International Relief, Bone Marrow Donation, Environmental Protection, and Community Volunteers.

M2181 Practices in Public Accounting (2/0): This course cooperates with KPMG CPA firm in providing the knowledge of CPA business, especially for the different industries accounting practices, to students.

M2187 Advanced Accounting (1) (2/0): The main purpose of this course is to introduce basic framework and practice of Financial Accounting. We will introduce the primary forms of business organization, accounting cycle, merchandising operation, internal control, and accounts receivable. Further, students can prepare and understand financial statement reports, then analyze a company’s financial structure.


T0466 English (1) (2/0): The objective of this course is to enhance students’ overall English skills, to promote students’ understanding of and respect for multiple cultures so they can develop a global perspective. Students will acquire knowledge in linguistic, pragmatics and rhetoric while reading extensively in class. Students will also nourish abilities in creativity, logical thinking, critical judgment, ethical awareness as well as skills of collecting and analyzing ideas presented in different sources.

T0466 International Business Management and Financial Report Analysis (2/0): This course trains students to look for important business insights from the financial analysis of international corporations. The course specifically focuses on firms' strategy and competition, supply chain management, and important customer analysis.

Master’s Program

B0124 Econometrics (0/3): The objective of this course is to familiarize students with econometric analysis of cross-sectional data. The contents focus on linear regression analysis and related issues. This course is designed to help the future research of students.

B0560 Theory of Advanced Accounting (3/0): This course will introduce some important issues of financial accounting including “accounting under ideal conditions,” “the decision usefulness approach to financial reporting,” “efficient securities markets,” “the information and measurement approach to decision usefulness,” “economic consequences and positive accounting theory,” “executive compensation,” “earnings management,” and “standard setting: economic and political issues.”

B0565 Advanced Management Accounting (3/0): First, we use case study to discuss accounting firm management and development, business competitive strategy and ethics. Second, we introduce management control system topics and research method. Finally, we introduce nonprofit organizations and corporate social responsibilities.

B1020 Tlaxm1A (0/3): Behavioral biases have become a popular explanation for a variety of capital market phenomena which are hard to be reconciled with a rational decision-making framework. This course is designed to enable participants to have a general understanding of behavioral finance. After taking this class, students are expected to acquire a systematic knowledge in behavioral finance theories, empirical results and applications.

E1136 Research Methodology (3/0): This course introduces the basic theory and concepts of business
research, the design of research, the sources and collection of data, and analysis and presentation of data. Discussion and interaction are emphasized in the course.

M0121 Service Management (3/0): The objective of this course is to help students better understand various subtle issues regarding service management in terms of theory construction, evaluation, and their application. This course will be composed of three parts: (1) literature studies; (2) individual presentations; and (3) individual reports. Classroom participation and discussion are vital parts of this course. A reading list will be provided in the beginning of the class. Every student is expected to read the materials before the class. No pre-requisite class for this class.

M0144 Seminar in Marketing Management (3/0): Marketing-oriented thinking is a necessity in today’s competitive world. This course enhances students’ knowledge about how to carefully analyze needs, identify opportunities, and create value-laden offers for target customer groups that competitors can’t match.

M2167 Statistical Software for Accounting Research (3/0): The purpose of this course is to teach students how to perform statistical data and econometric model analysis using Stata.

M0272 Seminar in Financial Management (3/0): Most business-related decision-making is heavily involved in financial concepts and financial management principles applied to government agencies, schools, hospitals, other non-profit business organizations, or individuals. Financial management integrates economic, accounting, legal, and other relevant business theories, creating practices that form a comprehensive science. The subject of financial management involves corporate finance, investment, and financial markets. This course will mainly focus on corporate finance issues.

M0747 Strategic Management (3/0): Strategic management analyzes the major initiatives taken by a company’s top management on behalf of owners, involving resources and performance in internal and external environments. Strategic management is concerned primarily with responses to external issues such as in understanding customers’ needs and responding to competitive forces. Strategic management provides overall direction to the enterprise and is closely related to the field of Organization Studies. Theory explanation and case study are adopted.

M0781 Advanced Financial Management (0/3): Most business-related decision-making involves financial concepts and financial management principles applied to government agencies, schools, hospitals, other non-profit business organizations, or individuals. Financial management is an integration of economic, accounting, legal, and other relevant business theories, practices formed a comprehensive science. The context of financial management involved in corporate finance, investment and financial markets is covered. This course will mainly focus on corporate finance issues.

M0800 Business Ethics (0/3): This course introduces the concepts of business ethics and social responsibilities to accounting students. Based on perspectives of internal operations and external relationships of the organization, discussions of diverse ethical obligations towards the stakeholders will be undertaken to help accounting students cultivate a sense of professionally ethical conduct and values.

M0828 Public Budgeting (0/3): Public Budgeting knowledge and skills enhance the critical thinking skills needed for top public affairs job. It is hard to imagine effectively thinking about public policy and administrative decisions without considering costs and benefits and budget strategies. This class will improve your budget knowledge and technical skills from theory, regulation, and case, and it will also give you an entirely new view of policy-making, leadership, and the democratic process. Budget knowledge is essential to all strategic decision-making processes.

M0853 Electronic Commerce (0/3): The objective of this course is to discuss EC papers. Several issues are involved in this course, such as online retailing, branding, marketing, social media, innovative business model, etc.

M0878 Seminar (1/1): A research workshop will be held and accounting-oriented researchers will be invited to present their papers or to share their own research experiences. Hopefully, through participation in classes and extensive discussions, students will be inspired to conduct their own research.
M1090 Analysis of Financial Reports (3/0): This course intends to enhance students’ ability to analyze and use financial statements. Since the financial statement is an important communication tool between investors and firms, the knowledge of this course is important for students in their future careers.

M1091 Special Topics on Taxation (3/0): The main objective of this course is to introduce reforms made to the tax systems in Taiwan, including income tax, land tax, housing tax and other taxes. It will help students understand the meaning of the tax system through classroom lectures and discussions.

M1092 Topics in Electronic Commerce (3/0): The course is designed to help students to understand the definition, framework, development and applications of electronic commerce. Also, it discusses the differences, risks and opportunities between electronic and traditional commerce environments. Furthermore, it studies the research methods and procedures related to electronic commerce.

M1093 Quantitative Methodology of Accounting (0/3): The course introduces statistical methodology, along with case study and data analysis using statistical software. The following topics are included: testing hypotheses, chi-square test, analysis of variance, correlation and regression analysis.

M1103 Knowledge Management (0/3): The objective of this course is to help students better understand various subtle issues regarding knowledge management in terms of theory construction, evaluation, and their application. This course will be composed of three parts, i.e. 1) literature studies; 2) individual presentations; and 3) individual reports. Classroom participation and discussion are vital parts of this course. A reading list will be provided in the beginning of the class. Every student is expected to read the materials before the class. There are no pre-requisites for this class.

M1158 Positive Accounting Research (0/3): This course reviews and discusses the Positive Theory in Accounting and its methodology. The theory was formulated by Watts and Zimmerman [1986]. Since the mid-80s, the theory has provided one of the most dominant frameworks for accounting research, especially contract-based empirical studies on accounting behavior. This course emphasizes empirical methods in the following topics: accounting earnings and stock prices, the contracting process, compensation plans, debt contracts, political process, and empirical tests of accounting choices.

M1313 Econometrics (0/3): The objective of this course is to familiarize students with econometric analysis of cross-sectional data. The contents focus on linear regression analysis and related issues. This course is designed to help the future research of students.

M1620 Seminar on Corporate Governance (0/3): The purpose of this course is to acquaint students with current theoretical and practical issues in corporate governance. This course mainly covers corporations and the governance mechanism. This course will mainly revolve around discussions of selected books and academic papers. Hence, there will be group presentations to help familiarize students with corporate governance literature and generating researchable questions.

M1699 Seminar in Derivatives (0/3): This course provides students with a comprehensive understanding of key concepts about derivatives through in-depth topics, case study, and literature discussion. The course comprises derivatives’ definitions, types, functions, market organizations and operations, commodity valuation theories and operation strategies.

M1936 Seminar in Management Accounting (0/3): This course provides students with a comprehensive understanding of key concepts about derivatives through in-depth topics, case study, and literature discussion. The course comprises derivatives’ definitions, types, functions, market organizations and operations, commodity valuation theories and operation strategies.

M1937 Seminar on Empirical Research in Financial Accounting (3/0): This course focuses on recent topics in financial accounting. Students are expected to develop writing skills for their dissertation from this course.
M1938 Seminar on Auditing Studies (0/3): This course examines the international dimension of auditing studies.

M1971 Seminar in Tax Issues (3/0): The main objective of this course is to understand the tax systems, including income tax, land tax, housing tax and other taxes. It is to combine with the classroom lectures and discussions to help students to understand the meaning of the tax system.

M2057 Human Resource Accounting (0/2): Human capital is a specific topic of Intellectual Capital. This course is customized for students who are interested in human resource accounting studies. The instructor will guide students and discuss human resource accounting related issues through paper reading, data analyzing and logical reasoning. The students are expected to have an in-depth understanding of the relationship between human resource management and accounting.

M2098 Intellectual Capital (3/0): This course will introduce the concept and practice of intellectual capital and how to manage organizational intellectual capital. We will demonstrate theories and practices in intellectual capital through lectures, discussions and reading activities.

M2167 Statistical Software for Accounting Research (2/0): The purpose of this course is to teach students how to perform statistical data and econometric model analysis by using Stata.

M2188 Financial Statement Analysis and Valuation (2/0): This course intends to enhance students’ ability in analysis and use of financial statements. Since the financial statement is an important communication tool between investors and firms, the knowledge of this course is important for students in their future careers.

M2245 Big Data Mining (0/6): The purpose of this course is to enable students to get practical experience with big data in order to enhance future employment opportunities.

M2252 English Seminar in Management Accounting Practice and Case Study (3/0): This course cultivates graduate students’ English language communication capabilities. The course persuades and encourages graduate students to read and analyze case materials, communicate with colleagues and express their professional opinions regarding to issues related to management accounting topics.

M2253 Corporate Tax Administration (3/0): This course is customized for students who are interested in corporate tax administration—e.g. the multinational corporate income tax; taxation of dividends; value-added and non-value-added business tax; offshore income; transfer pricing etc. The instructor will guide students to discuss the tax subjects in the course. The students are expected to have in depth understanding and thinking for the various tax issues.

M2254 Theory and Practice of Corporate Social Responsibility (3/0): The purpose of this course is to acquaint students with current academic and practical issues in corporate social responsibility (CSR). This course mainly covers meaning, development, and practice of CSR. The course involves careful consideration of the literature and case discussions that allow students a chance to apply the concepts of CSR.

M2255 Corporate Governance Practice and Case Study (0/3): The purpose of this course is to acquaint students with current academic and practical issues in corporate governance. This course mainly covers corporations and the governance mechanism. This course will mainly revolve around discussions of selected books and academic papers. Hence, there will be group presentations to help familiarize students with the corporate governance literature and research questions.

M2256 Business Valuation: Theory and Practice (0/3): This course enhances students’ abilities in analysis and the use of financial statements. Since the financial statement is an important communication tool between investors and firms, knowledge presented in this course is important for students in their future careers.

M2257 Accounting Issues in Non-profit Organization (0/3): Taiwan non-profit organizations are proliferating and many accountants lack full understanding of non-profit organizations accounting transactions and tax practices. This course helps students understanding the accounting system of non-
profit organizations and the points of financial reports.

M2299 Strategic Management and Case Study (0/3): This course introduces the concept and process of strategic management, and how to perform strategy successfully. We will show the theory and practice of strategy by lecture, as well as discussing and reading papers.

M2338 Seminar in Tax Planning Issues (3/0): The main objective of this course is to understand the tax systems, including income tax, land tax, housing tax and other taxes. Combining the classroom lectures and discussions will help students to understand the meaning of the tax system.

M2339 Corporate Tax Governance (3/0): This course is customized for students who are interested in corporate tax governance. Especially, focusing on international tax policy trends and prevention of BEPS implementation, the issue of corporate tax administration is deeply stressed. The structure of the course includes the multinational corporate income tax, types of anti-avoidance rules, as well as the issues that arise from digital economy, etc. The instructor will guide students to discuss the tax subjects in the course. The students are expected to have in-depth understanding and thinking about the various tax issues.

M2380 Seminar in Tax Issues (0/2): This course is customized for students who are interested in practice of tax and tax issues. Especially, focusing on international tax policy trends and prevention of BEPS implementation, the issue of corporate tax administration is deeply stressed. The structure of the course includes the multinational corporate income tax, types of anti-avoidance rules, as well as the issues of the digital economy, etc. The instructor will guide students to discuss the tax subjects in the course. The students are expected to have in-depth understanding and thinking about the various tax issues.

T0081 Research Methodology (0/3): This course is concerned with training students in the basic methods and theories for research, including the research process, research basic terms, research reasoning and data collection. In addition, we train students in research ethics and skills used in writing theses.

EMBA Master's Program

T0081 Research Methodology (3/0): This course is concerned with training students in the basic methods and theories for research, including the research process, research basic terms, research reasoning and data collection. In addition, we train students in research ethics and skills used in writing theses.

M0800 Business Ethics (0/3): The course presents the conceptual context of social responsibilities and business ethics. Through case studies, the students are expected to develop a sense of professional ethical conduct and criteria in the professional judgments. The students are also expected to behave ethically in their future business acts, so as to help their businesses or organizations act as a good “corporate citizen.”

M1039 Corporate Governance (3/0): The purpose of this course is to acquaint students with current academic and practice issues in corporate governance. This course mainly covers corporations and the governance mechanism. This course will mainly revolve around case discussions that provide students with a way to apply concepts of corporate governance to real-world business situations.


M1092 Topics in Electronic Commerce (3/0): The objective of this course is to discuss EC papers. Several issues are involved in this course, such as online retailing, branding, marketing, social media, innovative business models, etc.

M1093 Special Topics in Accounting and Auditing (1/0): The course of "Special Topics of Accounting and Auditing" is designed as a similar course. We have 8 times inviting professional experts in different areas of accounting and auditing to make a special speech for students. The main purpose is to expand students' vision and understand the real practices.
M1203 Special Topics on AIS (0/3): The objective of this course is to discuss AIS and audit related issues. Three major issues are involved in this course: (1) the impacts of IT on business operations and transactions; (2) AIS related issues, such as risk assessment, internal control, and ERP; (3) computer audit and audit related issues.

M1699 Seminar in Derivatives (0/3): This course provides students with a comprehensive understanding of key concepts about derivatives through in-depth topics, case study, and literature discussion. The course comprises derivatives’ definitions, types, functions, market organizations and operations, commodity valuation theories and operation strategies.

M1971 Seminar in Tax Issues (0/3): This course is customized for students who are interested in practice of tax and tax issues – e.g. the basic concept and framework of offshore income; the issues of international tax avoidance; transfer pricing etc. The instructor will guide students to discuss the tax subjects in the course. The students are expected to have in depth understanding and thinking for the various tax issues.

M2077 Theory of Finance and Accounting (3/0): This course explores advanced accounting theory (AAT) by examining theoretical issues and studies that underlie the discipline of financial accounting, as well as some practical consequences of these issues. Related fields of study, particularly economics and finance, are drawn on to study the efficient markets hypotheses and agency theory and their implications for financial reporting, applications of the present value model in accounting, the counting standard setting process, and the economic consequences of accounting decisions.

M2167 Statistical Software for Accounting Research (3/0): The purpose of this course is to teach students how to perform data and regression analyses by using Stata.

M2188 Financial Statement Analysis and Valuation (0/3): The objective of this course is to discuss AIS and audit related issues. Three major issues are involved in this course: (1) the impacts of IT on business operations and transactions; (2) AIS related issues, such as risk assessment, internal control, and ERP; and (3) computer audit and audit related issues.

M2222 Seminar on Taxation Accounting (3/0): This course is customized for students who are interested in tax accounting and tax issues. The instructor will guide students to discuss the issues of tax accounting through tax examples in the course, including how to convert financial accounting into tax accounting in IFRS age, opening uniform invoice matters and the related accounting treatment, and the related tax accounting issues of VAT and non-VAT, and Business income tax. The students are expected to have in depth understanding and thinking for the various tax subjects.

M2253 Corporate Tax Administration (0/3): The purpose of this course is to enhance the students’ understanding of the tax-for-profit practice through classroom lectures and group discussions.

M2254 Theory and Practice of Corporate Social Responsibility (0/3): The purpose of this course is to acquaint students with current academic and practice issues in corporate social responsibility. This course mainly covers meaning, development, and practice of CSR. This course will mainly revolve around literature review and case discussions that provide students with a way to apply concepts of CSR.

M2339 Corporate Tax Governance (3/0): This course is customized for students who are interested in corporate tax governance. It especially focuses on international tax policy trends and the prevention of BEPS implementation. Issues of corporate tax administration are also stressed. The structure of the course includes multinational corporate income tax, types of anti-avoidance rules, as well as issues surrounding the digital economy. The instructor will guide students in discussing tax subjects in the course. Students are expected to gain in-depth understanding and thinking on various tax issues.

M2340 Seminar in Non-Profit Accounting (0/3): The course introduces the accounting system of a Nonprofit Organization.

M2347 The Practice of Internal Controls and Audit (3/0): In the competitive environment, internal control and internal auditing are indispensable and important management tools. Because no enterprise
can completely eliminate its operational risk, the management must establish effective internal control, and risk control of a reasonable range. An enterprise should establish an audit system to prevent the risk of unexpected and exceptional events.

M2369 Accounting And Wealth Management (0/3): This course introduces the business and industry of the financial wealth. The management and operation of financial wealth are the new subject of the modern universal banking and private banking. Expertise of being well trained in wealth management must involve the investment portfolio theory, tax code, risk management, asset allocation strategies, and investment objectives and goals.
DEPARTMENT OF STATISTICS

Degrees Offered: B.S., M.S.

Chairman: Hsiu-mei Lee (李秀美)

The Department

The predecessor of the Department of Statistics was the Statistics Section in the Department of Accounting and Statistics, founded in 1963. The Department of Statistics was organized as an independent department in 1973. The master’s program was established in 1997. Since 1963, over 7,000 Bachelor’s degrees and Master’s degrees have been granted.

The department offers broad undergraduate and graduate programs to meet the diverse needs of students at different levels. Both programs give students sufficient flexibility to pursue their special interest and time to take courses in other departments. At the undergraduate level, there are several introductory courses which prepare students for more advanced courses on statistical inference and applied statistical analysis. The department’s master program stresses a balance between statistical theories and practical applications, preparing students for careers in industry, business, government, medical research, and academia. Both undergraduate and graduate programs cultivate students’ abilities to conduct data analysis of real world problems in diverse areas.

The department emphasizes the practice of sample surveys, marketing analyses, industrial engineering, biological sciences, and many other areas. To help achieve TKU’s triple objectives of education and accomplish multimedia-aided instruction, all faculty members are encouraged to make multimedia-aided teaching materials for the required courses. By combining the interests and expertise of faculty with the campus information network, we encourage faculty and graduate students to engage in cooperative research with people in other areas. To embrace and engage the age of the knowledge data economy, we are devoted to promote competitive capability, meet the demands of industry, offer opportunities for in-service personnel, and train students to be statistical specialists both in theory and practice.

Faculty

Professors
Chun-tao Chang (張春桃); Wen-shuenn Deng (鄧文舜); Jyh-jiuan Lin (林志娟);
Tzong-ru Tsai (蔡宗儒); Chin-chuan Wu (呉錦全); Shu-fei Wu (吳淑妃);
Shuo-jye Wu (吳碩傑)

Associate Professors
Ya-Mei Chang (張雅梅); Ching-hsiang Chen (陳景祥); Li-ching Chen (陳麗菁);
Man-hua Chen (陳蔓樺); Yi-ju Chen (陳怡如); Vivian Yi-ju Chen (陳怡如);
Hsiu-mei Lee (李秀美); Pai-ling Li (李百靈); Yi-Hua Wang (王藝華);
Bor-shyh Wen (溫博仕)

Lecturers
Wen-yen Wang (王文嚴); Wen Yang (楊文)

Degree Requirements

The Department of Statistics offers both undergraduate and graduate programs.

1. Requirements for a degree of B.S. in Statistics:
   Completion of 128 credits of courses, including 93 credits of required courses and 19 credits of elective statistics courses.

2. Requirements for a degree of M.S. in Statistics:
   A master’s degree requires a minimum of 37 graduate credits including 10 credits of required courses, 4 credits of Topics in Applied Statistics and 4 credits of Seminar. At least 30 credits must be completed within the department. Students are required to complete a thesis under the supervision of a faculty member of the department, submit a thesis, and pass an oral examination.
Course Descriptions

Undergraduate Courses

B0032 Marketing Survey (3/0): This course is an introduction to scientific research skills for managers, research processes and designs, measurement and selection, and data collection.

B0106 Casualty Property Actuarial Analysis (0/3): This course covers the theory of interest, concepts of certain annuities, measurement of mortality and life table, life annuities, life insurance, net annual premium, net level premium reserves, pricing for casualty insurance, statistical base, overall average pure premium and/or loss ratio, construction of loading and gross premium, risk classification, and ration plans.

B0109 Insurance (3/0): Topics include: what insurance is all about: risk management and insurance, insurance and the law, insurance contracts policy analysis, limitation of amount of recovery, and loss-adjustment provisions.

B0263 Money and Banking (2/2): This course deals with the nature and functions of money and finance, commercial banking, central banking, monetary theory, and international monetary relations.

B0302 Economics (2/2): This course discusses two main topics: the individual economy and theories of supply and demand, analysis of consumer acts, theory of production, structure of cost, structure of market, and supply and demand of production factors; and collective economy as the study of national income, determining rules for equalization of income standards.

B0456 Security Analysis (0/3): The lesson focuses on (1) macroeconomics analysis about investment; (2) financial reports analysis about security; (3) technical analysis of security; (4) fixed-income security analysis.


M0115 Multivariate Analysis (3/0): This course covers a review of the matrix theory, univariate and multivariate normal distributions. Inference about multivariate means includes Hotelling’s T squared. Inference about covariance structure includes principal components, factor analysis, and canonical correlation. Classification techniques include discriminant and cluster analysis.

M0153 Operations Research (3/0): This course includes basic techniques for modeling and optimizing deterministic systems and stochastic models with emphasis on linear programming, integer programming, queuing theory, and inventory. Applications to production, logistics, and service systems are also covered.

M0191 Survey Sampling (3/0): This course offers an introduction to the design of sample surveys and the analysis of survey data. It emphasizes practical applications of survey methodology. Topics include sources of errors in surveys, questionnaire construction, simple random, stratified, systematic and cluster sampling.

M0202 Quality Control (0/3): This course offers an introduction to statistically based quality improvement methods useful in industrial settings, inspection data for quality control, sampling plans for acceptance inspection, and charts for process control.

M0203 Case Studies in Government Statistics (0/3): This course covers an introduction to the organization and major responsibilities of government statistics. It focuses on training through case studies. The course also emphasizes the need to sit for the Civil Service Examination.

M0264 Time Series (0/3): This course covers autocorrelation and elements of spectral analysis, autoregressive and moving average models, identification and fitting, forecasting, and seasonal adjustment.
M0322 Advanced Statistics (4/0): This course provides an introduction of various statistical inferential techniques. It focuses on a comprehensive understanding of the fundamental statistics and related applications. Topics include analysis of variance, regression analysis, chi-square tests, nonparametric statistics, and other advanced statistical methods. Prerequisite: Statistics.

M0344 Data Processing (2/2): This course introduces students to the use of computers to administrate, process, and manage mass and complex data.

M0364 Computer Applications in Statistics (2/2): This course covers the organization and application of computers and statistical packages in data processing. Other topics also include data handling in terms of coding, preparation, acquisition, file organization and retrieval, screening and reduction, summarization and tabulation, statistical analysis, and survey of available packages and applications.

M0404 Management Mathematics (3/0): To learn advanced calculus theory and applications of advanced calculus in statistics.

M0405 Management (3/0): This course not only offers students a theoretical framework for managing, but also illustrations and examples of how and when those theories do and do not apply in both small and large businesses as well as in non-profit organizations.

M0423 Machine Learning (0/3) This course introduces machine learning concepts, methods, and tools. The contents include linear regression, classification, resampling methods, model selection, regularization, GAM models, tree-based methods and support vector machine.

M0481 Categorical Data Analysis (0/3): This course covers methods of analyzing multidimensional contingency tables with an emphasis on practical applications. Topics cover the use of computing packages for analysis of such data, model selection, testing goodness of fit, and estimation of parameters.

M0517 Statistics (4/0): This course covers graphical and numerical descriptive measures, probability, random variables, expectations and variance, sampling distributions, central limit theorem, confidence intervals, hypothesis testing, chi-square tests, analysis of variance, regression analysis and nonparametric statistics.

M0518 Accounting (2/2): This course focuses on accounting concepts, the accounting model and financial statements. The course also discusses accounting for single proprietorships, partnerships, and corporations.

M0947 Data Mining (3/0): This course covers techniques and real-world applications in Data Mining, including decision trees, neural networks, association rules, and case studies.

M1043 Survival Analysis (0/3): This course provides an overview of survival data analysis, including an introduction to the lifetime variable, censored data, and parametric and nonparametric inference.

M1302 Special Topics in Statistical Application and Exploration (0/2): This course provides an overview of the field of statistics for students who will continue to study cases in applied statistics.

M1601 Statistical Seminar (3/0): This course includes special topics in probability theory and mathematical statistics designed to meet the needs and interests of individual students.

M1831 Investment Theory and Market of Securities (3/0): This course focuses on investing equities in stock markets, fixed-income, mutual funds, options and futures. Theories and their applications, and a connection between the course and gaining financial certificates will be introduced.

M1998 Applied Statistical Methods (I) (2/0): This long-distance learning course is designed for students wishing to solve daily-life problems efficiently with the software Microsoft EXCEL. Statistical techniques of converting data into information are introduced through dynamic and graphical presentation. Statistical background is helpful but not necessarily required in this course.
M1999 Applied Statistical Methods (II) (0/2): This is a sequential, long-distance learning course that follows on from Applied Statistical Methods (I). It focuses on statistical inferential problem-solving using Microsoft EXCEL.

M2153 Special Topics for Applied Statistics (0/2): This course helps students develop the ability to propose a project, collect the related data and make decisions.

M2368 R Programming (3/0): This course teaches the applications of R statistical software in Statistics.

M2403 Business Data Processing System (2/2): This course uses Excel to learn data collection and analysis software.

M2404 Exploration and Application of Internet Data (2/2): The network has huge amounts of structured and unstructured data. Use of program automation to crawl data and data from the web, and then the use of the web page to present useful information interactively will be presented. The entire process will use existing cloud services to bridge the trend of enterprises using cloud services.

S0075 Statistical Application in Bio. (3/0): This course provides a comprehensive introduction to basic statistical approaches and focuses on biomedical applications. Students will learn how to deal with biomedical problems via statistical methods through analyzing real examples.

S0191 Regression Analysis (3/0): This course is an introduction to regression with emphasis on practical applications. It involves simple linear regression and multiple linear regression models, inference about model parameters and predictions, diagnostic and remedial measures related to the model, independent variable selection, and multicollinearity.

S0210 Advanced Calculus (0/4): This course covers fundamental notions of limits, continuity, differentiation, and integration for functions of one or more variables, convergence of infinite series, and improper integrals. Prerequisite: Calculus.

S0295 Nonparametric Statistics (3/0): This course is an introduction to nonparametric statistics, including one or two sample testing and estimation methods, one or two-way layout models, sign test, signed rank tests, Mann Whitney Wilcoxon procedures, Kolmogorov Smirnov tests, and discussion and comparison with parametric methods.

S0325 Calculus (4/0): This course covers limits, differentiation and integration of functions of one variable, infinite series, functions of several variables, partial derivatives, and multiple integrals.

S0408 Design of Experiments (0/3): This course offers an introduction to the basic principles of experimental design. Topics include an analysis of variance for experiments with single factor, randomized blocks and Latin square designs, multiple comparison of treatment means, factorial and fractional factorial designs, and nested designs.

S0439 Linear Algebra (2/2): Topics of this course include: matrix algebra, linear systems of equations, vector spaces, subspaces, linear dependence, rank of matrices, determinants, linear transformations, eigenvalues and eigenvectors, diagonalization, inner products and orthogonal vectors.

S0450 Introduction to Probability Theory (3/3): This course offers an introduction to the theory of probability, conditional probability, independence, Bayes rule, random variables and their distributions, and moment generating functions. Multivariate probability distributions, covariance, distributions of functions of random variables, sampling distributions, limiting theorems and order statistics are covered. Prerequisite: Calculus.

S0582 Mathematical Statistics (3/3): Topics of this course include: sufficiency, completeness, unbiased estimation, maximum likelihood estimation, Bayes estimation, confidence intervals, tests of hypotheses, Neyman-Pearson fundamental lemma, uniformly most powerful and likelihood ratio tests. Prerequisite: Introduction to Probability Theory.
Master’s Program

M0115 Multivariate Analysis (3/0): The objectives of this course are to cover a wide range of multivariate applications, to provide a comprehensive study of the literature in multivariate analysis and to develop students’ intuition to apply multivariate methods, and to enable students to interpret the results of the analysis.

M0189 Sampling Theory (0/3) This course covers concepts of sampling survey, major sampling designs and its estimation procedures, and evaluation of precision of a sampling design.

M0153 Operations Research (3/0): The purpose of the course is to present the fundamental concepts and the technical method in the operations research. Topics include linear programming, transportation problem, assignment problem, network optimization models and decision analysis.

M0202 Quality Control (3/0) This course is concerned with how to use modern statistical methods for quality control and improvement, including subjects from basic principles to state-of-the-art concepts and applications. The objective is to give students a sound understanding of the principles and the basis for applying them in a variety of situations.

M0303 Statistical Theory (3/3): The purpose of this course is to build theoretical statistics from the first principles of probability theory, logical development, proofs, ideas, themes, etc., evolving through statistical arguments.

M0481 Categorical Data Analysis (0/3): This course is concerned with statistical methods for describing and analyzing categorical data. The main topics are the basic concepts of categorical data, chi-square tests, the log-linear model, and the logistic model.

M0798 Statistical Consulting (3/0): This course includes topics such as consulting experience in data analysis and applied statistics. Students are expected to learn communication techniques and study cases from various fields of real-world data.

M0880 Applied Linear Model (3/0): This course provides an exposition of the theory of linear models including practical aspects of residuals and data analysis.

M0883 Statistical Computing (3/0): This course emphasizes statistical computing and simulation, including Monte Carlo simulation methods, validation techniques, statistical analysis of simulated data, and bootstrap resampling.

M2271 Distributed Computation (0/3): To learn algorithms and techniques of distributed computing, such as single-machine parallel computing, multi-machine parallel computing, grid computing.

M2405 Quantitative Finance with R (0/3): The course emphasis on finance would include portfolios and capital asset pricing model, and discuss related statistics. Nearly all of the examples use data sets that are available in R, so students can reproduce the results. The prerequisites for this course are knowledge of calculus, probability and statistics. Also, students should have some knowledge of computer programming. We would not teach R programming but each lecture provides an “R lab” with data analysis and simulations. Students can learn R from these labs and by using R’s help or the manual.

S0408 Design of Experiments (0/3): This course is concerned with the learning of the design and analysis of experiments in engineering applications. The statistical software package Minitab is used to conduct data analyses of examples in the textbook so that students can easily follow the techniques described.

T0095 Seminar (I) (1/1): The aim of this course is to help graduate students to understand the recent developments and results of statistical research in different areas. This course provides opportunities for students to practice the skills of oral presentation. A few invited talks are also given by some scholars in this semester. With the process of reporting and questioning, it is possible for the students to improve their skills in briefing. The invited talks can also increase the statistical knowledge of students. Furthermore, it intends to improve the research ability and quality of students.
T0096 Seminar (II) (1/1): The aim of this course is to help graduate students to understand the recent developments and results of statistical research in different areas. This course provides opportunities for students to practice the skills of oral presentation. A few invited talks are also given by some scholars in this semester. With the process of reporting and questioning, it is possible for the students to improve their skills in briefing. The invited talks can also increase the statistical knowledge of students. Furthermore, it intends to improve the research ability and quality of students.
DEPARTMENT OF INFORMATION MANAGEMENT

Degrees Offered: B.B.A., M.B.A., EMBA

Chairman: Chia-ping Yu (游佳萍)

The Department

Established in 1985, the Information Management Department is one of the first departments in its field in Taiwan. In 1992, the department set up its Master’s program to provide advanced courses in both computer technology and management theory. In 2004, it set up a Ph.D. program. In 2006, the EMBA program commenced. Currently, the Department has 20 full-time faculty members, 19 adjunct faculty members, and more than 725 undergraduates and 90 master’s students.

The department provides an ideal educational environment, with modern computer resources, high-level teaching facilities and field project opportunities. There are five laboratories in the department, containing 203 PCs and 91 servers equipped with Windows Server 2016, Windows 10, Microsoft Office, MIS tools, DBMS systems, DreamSpark, and extensive multimedia software. The laboratories not only provide popular application packages, such as Enterprise Resource Planning (ERP), and statistical analysis software for faculties and students to implement their systems, but also come equipped with communication equipment such as servers, routers, hubs and switches used for experimentation.

The department offers students the chance to gain practical experience serving as IT professionals at local firms and non-profit organizations. In the course “Project Practice,” students work in teams to operate information systems used by actual companies. The teams collaborate with clients to collect information, perform analyses, evaluate alternatives, and design a system. The teams present their results as written reports and oral presentations in a meeting with the clients and advisors. The field project requires students to apply knowledge from many courses in information management and business in a consistent, integrated framework.

Faculty

Professors
Ming-dar Hwang (黃明達); Huan-jyh Shyur (徐煥智); Chi-bin Cheng (鄭啟斌);
Reuy-shiang Shaw (蕭瑞祥); Chia-ping Yu (游佳萍)

Associate Professors
Jau-shien Chang (張昭憲); Hung-chang Lee (李鴻璋); En-hui Liang (梁恩輝);
Te-chao Liang (梁德昭); Heh-tyan Liaw (廖賀田); Andy Ay-hwa Liou (劉艾華);
Jiin-po Wu (吳錦波); Ming-yu Yang (楊明玉); Chi-chang Jou (周清江);
Ying-Hua Chang (張應華); Sheng-Pao Shih (施盛寶); Shih-chieh Wei (魏世杰)
Ya-Ling Wu (吳雅鈴); Yen-Hao Hsieh (解燕豪)

Assistant Professors
Min-Yuh Day (戴敏育)

Degree Requirements

1. Requirements for a Bachelor’s degree in Information Management:
   Completion of 128 credits of courses, including 89 credits of required courses and 23 credits of elective courses offered by the department.

2. Requirements for a Master’s degree in Information Management:
   Completion of 39 credits of courses, including 10 credits of required courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass two (one internal and one external) oral examinations.
3. Requirements for a Master’s degree of EMBA in Information Management:
The EMBA program in Information Management requires a minimum of 36 credit hours of coursework including 4 credits hours of thesis writing.

Course Descriptions

Undergraduate Courses

A2006 Fundamentals of Computer Programming (2/2): This course will first cover the basics about computer hardware and software, including the binary number systems. Then basic programming skills in Java will be introduced which include the debugging process, basic class/object concepts, and flow control statements.

A2087 Advanced Computer Programming (2/2): This course discusses object-oriented design and its implementation through programming languages. Students will learn object-oriented programming language C++, Java, and concepts and features of object-oriented language, such as classes, objects, methods, encapsulation, polymorphism and inheritance.

B0173 Commercial Law (2/0): The purpose of this course is to help students obtain a basic understanding of commercial law, and various business activities or organizational structures. The course focuses on such subjects as corporate law, the classification of companies, how companies are established, the authority structure in companies, and other related issues. In addition, students are introduced to the content of negotiable instruments law and insurance law.

B0302 Economics (2/2): This course covers two major topics: (1) the individual economy, i.e., prices and the theory of supply and demand, analysis of acts, consumers, structure of cost, etc.; (2) the collective economy, i.e., the study of national income and determining rules for equality in income standards.

E0175 Operating Systems (2/0): This course provides an introduction to the operation concepts of modern operating systems. Specifically, the course will cover processes and threads, mutual exclusion, CPU scheduling, deadlock, memory management, and file systems. Depending on the actual progress of the course schedule, Microcodes and Queueing Theory may also be covered.

E0648 Database Design (0/3): This course, which introduces the SQL programming of Database implementation, emphasizes various aspects related to the use of databases, such as the syntax of Database SQL (Structured Query Language) in DDL (Database Definition Language), DML (Database Manipulation Language), DCL (Database Control Language), and Database Security Coding, etc.

E1034 Introduction to Computers (2/2): This course provides an introduction to basic concepts and knowledge in the field of computer science. Topics include machine architecture, algorithms, programming languages and data organization.

E1111 Algorithms (3/0): This course is designed for students interested in Artificial Intelligence. It will cover the topics of Divide-and-Conquer, Dynamic Programming, Greedy Method, Backtracking, Branch-and-Bound, Computational Complexity and NP-Complete.

E1827 Network Programming (3/0): This course introduces the Web application design and practices of implementation. This course is focused on using Microsoft ASP.NET With VB as the practices tool to learn ASP.NET With VB programming language and to know the Web application programming that includes: basic server control items, advanced server control items, data validation controls, Web applications and state management, site appearance and navigation, the site configuration and deployment, the application of control items for access Database and the introduction of integrated application examples.

M0066 Production and Operations Management (0/2): Operations management is a critical factor in improving productivity. Businesses can build up competitive advantage and advance productivity by taking advantage of efficient work flows. This course not only considers how a business can achieve a competitive advantage, but it also lets students learn some techniques and tools that can apply to business in practice.
M0142 Marketing Management (0/3): This course considers the application of management to marketing.

M0171 System Analysis and Design (0/3): This course provides basic concepts and procedures for developing information systems. Topics include the development life cycle, accompanying analysis/design tools, and a systematic approach to systems planning during system development.

M0271 Financial Management (3/0): This course analyzes the underlying theories, principles and techniques used in financial management to maximize the value of a firm. Topics include cash flow analysis, risk and return measurement, capital budgeting, cost of capital, long-term financing policy, working capital management, etc.

M0286 Project Management (0/3): The goal of this class is to cover not only the concept of project management, but also to give students a solid understanding of the processes, resource control, and implementation of project management necessary to support project managers. Introduction to project management as a series of plans, organization, employment, guidance and control. The course explores how to make full use of corporate resources, including cost, scope, scheduling of employees, etc., to achieve the relative short-term goals of the enterprise.

M0404 Management Mathematics (0/2): This course discusses important mathematical concepts in the field of management. Topics include operation research, data analysis, and prediction methods, etc.

M0405 Management (3/0): This course provides students a comprehensive, systematic and relevant introduction to the field of management. Students will learn theoretical frameworks that guide managerial activities and illustrations and examples of how and when those theories do and do not work in both small and large businesses as well as in non-profit organizations.

M0490 Network and Communication (2/0): This course studies telecommunications and computer networks, including data communications, computer interfaces, transmission media and error detection. Some combined Tele-networking demands and trends in business are also discussed.

M0517 Statistics (2/2): This course provides a strong mathematical background in statistics, and basic techniques for summarizing, analyzing, and interpreting large sets of data.

M0518 Accounting (2/2): This course focuses on accounting concepts, the accounting model, and their relationship to finance statements. Also, the course discusses the accounting methods of single proprietorships, partnerships, and corporations.

M0590 Introduction to Information Management (0/2): The MIS course deals with impacts and solutions as applied to information systems. Topics include the information development procedure, strategic role of IS, human and organization factors within MIS, and ways to apply information techniques.

M0664 Elements of Discrete Mathematics (2/0): Discussion of rings, groups, and coding theory.

M0842 Hot Issues of Information Management (2/0): This course helps students to understand and analysis the direct connection between information systems and business performance though case study of information management hot topics. It helps students a better understanding of how specific companies use information systems to achieve the main business objectives: operational excellence, new products and services, customer and supplier intimacy, improved decision making, competitive advantage, and survival.

M0853 Electronic Commerce (2/0): This course introduces the strategies, models, technologies and applications of e-commerce. Students are required to examine practical cases to better understand the effects of e-commerce on businesses and consumers.

M0917 Information Technology of Enterprises (2/0): The application of information technology in enterprises has become one of the main trends of the current era. Nowadays, various industries apply the most recent technology to reduce cost and increase efficiency, thereby creating a competitive
advantage. Course content includes the application of information technology in the electronics industry, telecommunications industry, healthcare industry, digital content industry, as well as in enterprise cloud processing and mobile commerce applications. Students will learn about various trade and information technology applications.

**M1058 Introduction to Information Security (0/2)**: This course introduces the fundamentals and practices of information security. Topics include introduction to information security, information security threats and attacks, hacker practices research, authentication, authorization and access control, information security architecture design, basic cryptography, information systems and network model, firewalls, network intrusion detection and multi-layered defense, information security management system.

**M1087 Enterprise Resource Planning (0/2)**: From the perspective of information systems and IT project management, this course introduces basic concepts of enterprise resource planning (ERP) system and issues on mutual cooperation using the ERP system. Students will come to understand the business process and learn how to take advantage of SAP B1 to construct information systems.

**M1326 Programming and Data Structures (3/3)**: In the first semester, this course focuses on object-oriented programming. The purpose of this course is to equip students with high-level programming skills in C++ and Java. The second semester introduces data structure concepts and their implementation, which incorporates the programming skills taught in the first semester.

**M1606 Electronic Business (2/0)**: The basic management concept and technology of the e-business will be introduced. In addition, this course invites business executives and technology experts to address the technical and management issues related to the electronic business of enterprises. The students should apply their knowledge to analysis industry practice cases which are discussed in the class. They will not only learn from these cases but also understand the trends and needs of the electricity market, to make possible recommendations by themselves.

**M1824 Case Study for Information Management (3/0)**: This course helps students to understand and analyze the direct connection between information systems and business performance though case studies. It helps students gain a better understanding of how specific companies use information systems to achieve their main business objectives: operational excellence, new products and services, customer and supplier intimacy, improved decision making, competitive advantage, and survival.

**M1867 Marketing Planning (0/2)**: This course covers the following topics: functions of marketing planning, procedures of developing a marketing plan, structure and format of a marketing plan, data collection and market survey, industrial analysis and market analysis, marketing 4P, marketing strategies and programs, and marketing plan writing and implementation. In addition to lectures on these topics, case studies and group discussions will also be incorporated.

**M1891 Information Service (2/0)**: The objective of this course is to assist students to apply their classroom learning and reflection to enhance their self-service capabilities. During the course, service teams made up of students will provide information services to local communities. Students are expected to fine tune their abilities to apply information technology to solve practical problems.

**M1892 The Issue of Information Security Management (0/2)**: This course introduces international standards that have been proposed to provide a model for establishing, implementing, operating, monitoring, reviewing, maintaining and improving an Information Security Management System (ISMS). Through this course, students will gain a basic knowledge of the process of ISMS design.

**M1894 Managing Digital Enterprises (0/3)**: The modern enterprise is becoming more digital in terms of what it is and what it does. Thus this course provides some important topics in managing digital enterprises. Topics included are: website design and evaluation, business models, market channel conflicts, cyber trust, intellectual property, security, and ethics.

**M1953 Operating System Practices (0/2)**: This course is an extension of the subject ‘Operating Systems’ that emphasizes advanced topics of a practical nature. Students should already possess a basic understanding of computer hardware and process scheduling, as this course focuses on advanced
concepts of process synchronization, memory management, deadlocks, file systems, and secondary storage structures. Some examples of related system programs will be demonstrated, too.

**M1955 Project Practice (1/2/1):** This course is designed for students to practice a project by conducting system analysis/design and implement an information system. The implemented information system is expected to successfully operate on a computer.

**M1956 Information Ethics and Law (2/0):** This course introduces information ethics and the law. Content includes copyright, intellectual property, privacy, Internet ethics etc. Students will gain an understanding of information law and ethics to prevent violations of the laws and loss of rights.

**M2018 Customer Relationship Management (CRM) (0/2):** This course is designed to introduce customer relationship management (CRM) concepts and architecture, as well as the certification test contents and system operation of customer relationship management system application engineer (e-Contact + version) promoted by the General Chamber of Commerce of the Republic of China. The main courses contents include: CRM Introduction, e-Contact + system technical overview and systems management, basic module, marketing module, service module, and marketing modules.

**M2084 Practices of Business Intelligence (0/2):** This course introduces the fundamental concepts and technology practice of business intelligence. Topics include Business Intelligence, Analytics, and Data Science, AI, Big Data, and Cloud Computing, Descriptive Analytics: Nature of Data, Statistical Modeling, and Visualization, Business Intelligence and Data Warehousing, Predictive Analytics: Data Mining Process, Methods, and Algorithms, Text, Web, and Social Media Analytics, Prescriptive Analytics: Optimization and Simulation, SNA, Machine and Deep Learning, NLP, AI Chatbots and Conversational Commerce, Future Trends in Analytics.

**M2123 Practices on Networks and Communication (0/2):** This course focuses on the TCP/IP protocol suit. Topics range from network layer protocols, IP, ARP, ICMP and IGMP to transport layer protocols, UDP, TCP, and SCTP. In addition, application layer protocols are also introduced during the course.

**M2124 Information Technology and Information Management Professional Certification (1/0):** With the advent of the era of license, certified professional functions and more attention, this course is offered to encourage students to obtain professional licenses and skills for employment purposes, all students are required to attend.

**M2166 Advanced Object-Oriented Programming (0/3):** The goal of this course is to provide building more concrete foundations for whom interested in object-oriented programming. First, we will navigate the object-model deeply, including introducing object creation and destruction, reflection and object serialization. Then, the applications of Java Collection Framework and distributed objects will be described. Finally, topics related to software reuse, efficiency and maintainability will be stressed.

**M2170 Data Exchange Languages (0/2):** In this course, mark-up languages including SGML, XML, HTML, and XHTML will be discussed. We focus on the syntax of XML and its grammar rules. The software tool for XML, DOM and SAX will be demonstrated using practical examples.

**M2172 Mobile Application Program Development (2/0):** This course is concerned with interactive system design and application of mobile devices.

**M2186 Information and Management Internship (0/2):** (1) Students who select this course have to take practical training at industries for at least 2 days a week; the training must be relevant to jobs of information, management, or business. (2) Units and items of practice have to be confirmed by the instructor. Units that are recommended by the Department of Information Management can waive the confirmation procedure; otherwise please contact the instructor by email (caching@mail.tku.edu.tw) for practice unit confirmation. (3) The semester scholastic records of the students are graded by the instructor based on the comments of the practice units.

**M2206 Mobile APP Development Techniques Practice (2/0):** This course is co-designed by the instructor and an APPs company. Each unit is taught by experienced practitioners in the APPs industry. The course covers the entire APPs development process, and the units of the course are well designed.
to confirm the logic relations between units. Lab units are included in the course. The works by students will be presented at the end of the semester in the form of an idea show, like AppWorks.

**M2235 Professional Composing and Design (2/0):** This course is concerned with Word documents to learn professional typesetting and design, including book layout and design, academic publishing, typesetting evaluation reports, manuals, production and design, advertising, document design and production of eBook.

**M2236 Presentation Design Techniques (0/2):** This course is concerned with PowerPoint presentations to learn design skills, including academic presentations production, business presentation design and production, interactive presentations production, presentation master production, multimedia presentations production, convert between file with other software.

**M2244 Big Data Mining (0/2):** This course introduces the fundamental concepts and applications technology of big data mining. Topics include Big Data Mining, Fundamental Big Data: MapReduce Paradigm, Hadoop and Spark Ecosystem, Association Analysis, Classification and Prediction, Cluster Analysis, Deep Learning with Google Tensor Flow, Data Mining Using SAS Enterprise Miner, Case Study and Implementation of Data Mining.

**M2284 Business Intelligence Analytical Techniques (0/2):** This course will use Excel massive data processing and analysis, Excel statistics and charts analysis, Excel database automation management, Excel Data Mining and me-ta-analysis to help students understand how companies large amounts of data generated by daily operations and various analysis, and then transform them into vital intelligence and information to assist in the development of relevant business decisions to produce excellent operating performance.

**M2314 Network Planning and Implementation (2/2):** This course aims to provide an entry level capability for network design and configuration in home and small businesses, small-to-medium businesses or Internet Service Provider (ISP). Many basic concepts and skills in local and wide area networks will be covered. The topics include subnetting, dynamic host configuration protocol (DHCP), routing information protocol (RIP), network address translation (NAT), and virtual local area network (VLAN). Students are required to learn the associated concepts and be able to configure the required functions in real routers.

**M2315 PHP API Programming (0/2):** This course examines the essentials of server-side programming, covering basic topics such as PHP and MySQL coding as well as advanced topics. Students will learn practical website applications such as form validation, session IDs, cookies, database queries and joins, file I/O operations, content management, etc.

**M2316 Application Developing on a Cloud Platform (0/2):** This course teaches students about collaborative design between Android and web services. Published by group works, students develop problem-solving skills, and learn to discuss and analyze various markets.

**M2317 Database Programming Development on Cloud Platform (2/0):** This course will use the ASP.net c# as development language, through ADO.net development, study and build a database and web coding skills and also introduced the operation principle and practice web development.

**M2318 Interactive Design and User Experience (0/3):** This course is designed to provide students with a solid understanding in various multimedia networks and the standards. It covers how to develop the platform to build multimedia information system.

**M2348 Secure Electronic and Mobile Commerce (0/2):** This course introduces advanced technologies for secure electronic commerce, digital money, and payment systems. It covers well-known protocols (SSL, TLS, WTLS, and SET), encryption algorithms, EDI, micropayment, and IC cards. Impacts of electronic commerce on the society will also be discussed.

**M2394 Introduction to Machine Learning (0/2):** Recently machine learning has seen wide use in big data analysis. With theory and practice in mind, this course will first introduce various learning algorithms and then demonstrate their applications in different fields. Students will use the Weka machine learning software for practice. As a term project, the students will apply and evaluate the
learning algorithms on real-world datasets.

**M2395 Object-Oriented Software Developing Technology (3/0):** When developing an Object-oriented Software System, there exists a large gap between the analysis phase and implementation phase. It needs more related techniques to build a proper connection. To this end, this course provides important insights in OO design and implementations. The contents include object models, design patterns and software refactoring, etc. And, we will use extensive practice to help the students to understand the details of those topics.

**S0325 Calculus (2/2):** This course is designed to provide students with a solid foundation in calculus. It covers analytical geometry and differential and integral calculus of a single variable.

**V0024 Linux Operating System(0/2):** This course will cover the basics about Linux operating system, include the installing and configuration. Then basic Internet service application will be introduced which include setup and configuration of protocols of services of http, ftp, smtp ...etc.

**Master’s Program**

**E1169 Software Development (0/2):** Continuing the course of M0829, we discuss how to develop a software library. The development of a library is harder than that of an ordinary project since more cases must be considered carefully. A sample text-IO library TwFC will be studied in this course.

**E1234 Data Analysis: Method & Application (0/2):** Today business must be more profitable, react quicker and offer higher-quality products and services and do it all with fewer people and low cost. In this class, we guide students to collect valuable information and knowledge and analyse the data through statistical techniques.

**E2827 Software Project Management (2/0):** This course is to enable students to understand the fundamental concepts and elements of project management. The course also exposes students to various control aspects of a project, such as requirement management, request for proposal, project proposal, scheduling, project-based organization, cost control, and resource management. Students are expected to gain the knowledge and skills in managing projects that are necessary for seeking employment opportunities.

**M0007 Artificial Intelligence (2/0):** Artificial intelligence (AI) is a research field that studies how to realize the intelligent human behaviors on a computer. The main research topics in AI include: problem solving, reasoning, natural language understanding, computer vision, machine learning, etc. In this course, we will study the most fundamental knowledge for understanding AI. We will introduce some basic search algorithms for problem solving, knowledge representation and reasoning, ontology, natural language processing, fuzzy logic, neural networks (deep learning), pattern recognition, etc.

**M0144 Seminar in Marketing Management (0/3):** This course will begin with introducing the fundamental concepts of Marketing Management, then will especially focus on the E-Marketing, including planning and management.

**M0272 Seminar in Financial Management (3/0):** This course offers a clear concepts, contemporary theory, and practical applications in order to help students understand the concepts and reasons behind tasks of finance management. These include corporate budgeting, financing, working capital decision making, forecasting, valuation-investment, and Time Value of Money (TVM).

**M0423 Machine Learning (2/0):** This course will introduce basic concepts and techniques for machine learning. Topics will include input preparation, output data representation, basic algorithms, evaluation methods, advanced algorithms, input/output transformations. Students are encouraged to study recent advances of related topics and use provided software and datasets to test the performance of various learning algorithms.
M0829 Software Technology (2/0): This course discusses the applications of Java language and platform. The subjects range from programming basics to GUI, networking, database, JavaBeans and complex commercial applications.

M0842 Hot Issues of Information Management (0/2): Students are required to perform in groups to collect and study interested topics or papers in the fields of information management/technology and give a formal presentation regarding their studies. Through the discussions with classmates and the instructor, students are able to explore their future research directions.

M0974 Data Mining (0/3): This course introduces basic data mining concepts and studies important data mining research papers. Topics include data preprocessing, association analysis, classification, clustering, text mining, web mining, and social network analysis.

M1348 Information Security Management (3/0): Course content includes introduction of information technology and information security management of Tamkang University, introduce PKI (Public Key Infrastructure) environment (includes RSA cryptography and application examples, hash function application examples, electronic signature), risk assessment and examples, Personal Data Protection Act, studying and analyzing the information security management related research reports.

M1432 Information Security Management Practices (0/3): (1) To introduce and discuss the international standards ISO 27001/ISO 20000/BS 10012 operational practices on TKU. (2) To introduce and discuss the data center facilities of TKU. (3) To introduce and discuss the current status of the TKU PIMS. (4) To visit various enterprises. (5) To discuss the related research reports of information security. (6) To discuss and exercise the hacker tools.

M1649 Data Acquisition Method and Thesis Writing (2/0): Describes the various types of data collection methods and review the library electronic databases claim the basic concept, to help gather information needed for research, and the use of concepts and judgments, and to prove and refute the other means of logical thinking, analysis, clarifying the principle of the theory to carry out academic papers written.

M1984 Practices of Project Management (1/1): With the undergraduate course of System implementations, the graduate students will assist the course advisor to monitor the progress and quality.

M2140 Advanced Machine Learning (0/2): This course will focus on applications of machine learning techniques to real datasets. Topics will include basic learning techniques, tools, datasets, and case studies. Students are encouraged to apply given software to datasets for attribute processing and evaluation of the performance of various learning techniques.

M2143 Social Media Apps Programming (2/0): This course introduces the fundamental concepts and practices of social media and mobile apps programming. Topics include introduction to Android / iOS apps programming, developing Android native apps with Java (Eclipse), developing iPhone / iPad apps native apps with objective-C (XCode), mobile apps using HTML5/CSS3/JavaScript, jQuery Mobile, create hybrid apps with Phonegap, Google app engine, Google map API, Facebook API, Twitter API, and case study on social media apps programming and marketing in Google Play and App Store.

M2196 Computational Intelligence (0/2): Students can learn the basic knowledge of evolutionary computation which belongs to the field of artificial intelligence. In this class, there are some techniques that will be introduced such as genetic algorithms, genetic planning, evolution strategy and evolution planning. In addition to clarify the basic theory of evolutionary computation, the application of evolutionary computation on business will be explained.

M2259 Open Data Research And Practice (2/0): This course discusses the practices and research related to international open data progress. The topics includes the issues included in International Open Data Conference, the differences of data sets between countries, the creative applications of open data, etc.

M2302 Topics in Internet Marketing Management (0/2): This course introduces the overall concept
of the network marketing. The content includes technology marketing strategy, strategic market planning and activities, Internet consumer behavior, marketing research in electronic commerce.

**M2396 Management and Application of Visual Data (2/0)**: Introduction to the processing methods for image and video data, and the methods for storing and retrieval of those data.

**M2397 Python Programming and Applications (3/0)**: This course introduces Python programming and applications. It starts with the basics and hopes to build a concrete foundation for students to apply Python in real-world applications. The contents include control structures, functions, classes, File I/O, networking, threads, and exceptions. In addition, application packages will also be introduced to deepen the learning scope of students.

**T0081 Research Methodology (3/0)**: The purpose of this course is to introduce graduate students to general research methods for information systems and related issues. Specific topics contain fundamental concepts and terminologies in research, types of research methods and their respective design, research measurement and statistical analysis, and writing research report for publications.

**EMBA Program**

**E1591 Decision Analysis (0/3)**: This course introduces Decision Theory as well as various decision analysis skills. The Scope covers Individual decision, Group decision, and Game.

**M0800 Business Ethics (3/0)**: This course introduces ethics from three different aspects - normative, applied (prescriptive), and descriptive to determine the true meaning of ethics. The social responsibility of businesses can then be discussed according to their social role using this ethical judgment. Through discussion a minimal level of responsibility for business can be established and can be used as a baseline for judgment of the moral actions of a business.

**M0990 Information Management Seminar (3/0)**: (1) The course introduces the research topics of information management, (2) how to write a research article, (3) paper reviews, (4) research experience sharing.

**M1521 Special Topics in Database Management Systems (3/0)**: This course will cover advanced relational database management issues and survey NO-SQL databases for handling big data problems within the cloud computing environment.

**M1604 The Plan and Management in Large Scale Projects (3/0)**: This course will share the experience of some real cases in planning and managing for a large scale project. We will take some industry projects to be real case studies, and discuss the complete procedure and experience for those projects. We hope the students not only can learn the skills of planning and managing on extra/large scale project, but also can catch know–how to fulfill an industry project.

**M1641 Strategies and Policies of Information Technology Management (0/3)**: Course content primarily includes the research and analysis of Tamkang University information strategies and policies, and also to explore the business cases for IT strategies and policies.

**M1990 Network Management Practice (0/3)**: This course introduces basic concepts about network management with cybersecurity in mind. After a review on operating systems and networking fundamentals, it focuses on analysis of network attacks and how to protect the networks. At the end of the course, the students will get to know prevailing industry practices on how to monitor, detect and respond to cybersecurity threats in network management.

**M2078 The Case Studies of Applications of Information Technology (0/3)**: The graduate students will use case studies to discusses the issues for organizations and individuals emphasizing applied information technology.

**M2230 Big Data Analysis (0/3)**: The objective of this course is to cultivate engineers and managers of big data analysis. The contents include data collection and cleaning, open-sourced NoSQL, data mining techniques, and deep learning. This course particularly emphasizes the concepts and techniques of data
M2324 Application of Financial Technology (0/3): this course considers the new field of financial technology that is changing existing financial institutions, services, and consumer behavior. These developments include emerging technologies such as big data analysis, artificial intelligence, blockchain, biology identity, and information security. Identifying trends in financial development trend and planning adaptation in financial business models are the most important issues currently.

M2398 High-Level Executives’ Experience Sharing Topics (3/0): This course will invite 7-8 senior executives of medium and large/new startup companies to give lectures in class. The background area of the speaker’s industry will be: cross-strait enterprises, new APP, e-commerce/financial information, cloud services, new ventures, tobacco and alcohol manufacturing and sales, telecommunications services, international standards, risk consulting, information security, credit reporting services, foreign services, etc. In order to improve the learning outcomes, after listening to the speech, students will submit a report of the experience.


M2844 Quantitative Research Methods (3/0): The purpose of this course is to introduce EMBA students to quantitative research methods for information systems and related issues. Specific topics contain fundamental concepts and terminologies in research, types of empirical research methods and their respective design, research measurement and statistical analysis, and writing research reports for publications.

T0081 Research Methodology (0/3): The purpose of this course is to introduce EMBA students to general research methods for information systems and related issues. Specific topics contain fundamental concepts and terminologies in research, types of empirical research methods and their respective design, research measurement and statistical analysis, and writing a research report for publications.
DEPARTMENT OF TRANSPORTATION MANAGEMENT

Degrees Offered: B.S., M.S.

Chairman: Yuh-Horng Wen (温裕弘)

The Department

Established in 1986, the Department of Transportation Management aims to help students develop their expertise in diverse transportation fields, including highway, railway, waterway, aviation, and urban transportation, in order to fulfill the needs of human resources for national economic development. Furthermore, to enhance the quality of advanced research and decision making in transportation and related industries, the graduate program not only focuses on the theories of transportation science but also emphasizes problem solving, and has recruited qualified candidates since 1995. Courses offered in the undergraduate program emphasize fundamental disciplines of transportation and management science, whereas the graduate program focuses on the theoretical aspects of transportation courses, as well as interdisciplinary technologies and practicalities. In addition, two special programs of logistics management, and air transportation are flexibly embedded in the course design for students to choose for their future career.

Faculty

Professors
Sheng-hsiung Chang (張勝雄); Wan-hui Chen (陳苑蕙); Chi-chung Tao (陶治中)

Associate Professors
Shiaw-shyan Luo (羅孝賢); Chun-hai Fan (范俊海); Chee-chung Tong (董啟崇)
Hsien-ming Chiu (邱顯明); Shih-sien Liu (劉士仙); Chao-che Hsu (許超澤);
Yuh-horng Wen (溫裕弘); Chih-Lin Chung (鍾智林)

Assistant Professors
Hsin-Ping Hsu (許心萍)

Degree Requirements

1. Requirements for a Bachelor of Science degree:
The Bachelor of Science degree is awarded after completion of 128 credits, with 90 credits of required courses and 20 credits of transportation related courses.

2. Requirements for a Master of Science degree:
The Master of Science degree is awarded after completion of 33 credits. Students are also required to write a thesis with the approval of the committee after the oral examination.

Course Descriptions

Undergraduate Courses

B0319 Transportation Economics (2/2): Transportation Economics is a branch of economics that deals with the allocation of resources within the transportation system. Transportation economics is the discipline concerned with the economic aspects of transportation problems, and involves the systematic analysis of transportation systems.

B0320 Transportation (3/0): The purpose of this course is to introduce students to the internal elements, external environment, and basic issues of transportation systems. This course will focus on the user’s behavior, system characteristics, and elements and operations of traveler/freight transportation systems, which include highway, railway, maritime, and air transportation.

E0543 Urban and Regional Planning (3/0): This course aims to apply multi-media methods to demonstrate key issues regarding city and regional planning. A series of planning concepts will first be
introduced and then contemporary urban development issues will be discussed.

**E0665 Transportation Engineering (3/0):** This course provides an introduction to the major areas of traffic engineering and transportation planning. It is suitable for upper-level undergraduates.

**E1034 Introduction to Computers (2/2):** The course is designed for freshmen, not only to enhance their computer knowledge, including programming, network management, network communications, multimedia, video graphics and others, but also to improve their ability to find information on the Internet. At the same time, related topics, like e-commerce, computer virus and information security, are introduced such that students can have enough skills for further investigating and learning more advanced techniques or applications. Finally, students can apply those abilities and skills to their daily life.

**E3486 Aviation Law (0/2):** This course describes how the system of civil aviation has been developed, explains the responsibilities and activities of national governments and ICAO in the field of civil aviation and reviews the relevant domestic and international laws and regulations. This course focuses on the operational, safety, licensing and security regulation of air transportation.

**M0022 Engineering Economics (0/3):** The purpose of the course is to familiarize students with the basic concepts and analytic techniques of engineering economics that are essential for evaluating economic feasibility of investment alternatives inherent in engineering projects. Students will acquire relevant knowledge through lectures, exercises, quizzes, and examinations.

**M0070 Traffic Engineering (0/3):** This course comprises three sections, including basic characteristics of traffic systems, capacity analysis, and signal control analysis. It provides basic training in the field of traffic engineering.

**M0153 Operations Research (3/3):** This course is an introduction to the basic operations, research procedures, and basic deterministic models of operations research. It covers the linear programming model, transportation problem model, assignment problem model, integer programming, and network models.

**M0258 Transportation Management Seminar (0/2):** This course provides graduate students from our department with practical knowledge and information through the holding of regular keynote speeches. In additional to speeches, the course also helps students understand concepts of knowledge management in the field of transportation. It also demonstrates how to complete a final term paper by working together in a team.

**M0356 Transportation System Analysis (0/3):** The first stage of this course focuses on the problem-solving process and model formulation in the field of transportation through various case studies. The second stage will emphasize demand analysis and alternative evaluation.

**M0360 Transportation Planning (3/0):** This course covers trip demand forecasting and network analysis and their extended applications. The purpose of transportation planning is to establish an efficient, economical and balanced transportation system, while reducing its impact on the environment. The result of achieving this is a transportation system that moves smoothly and safely in transporting both people and freight.

**M0404 Management Mathematics (2/2):** Management Mathematics (Linear Algebra) is a fundamental part of modern mathematics in the field of management science. This course provides a basic introduction to the concepts and techniques of linear algebra and its essential applications to the science of management decision.

**M0405 Management (0/3):** This course focuses on a basic introduction to the concepts and techniques of management. This course presents a thorough and systematic coverage of management theory and practice, including planning, organizing, leading, and controlling. Current issues and case studies in management are also discussed.

**M0431 Transportation & Storage Management (0/3):** This course covers physical distribution systems, logistic systems, transportation, and facility and inventory decision in logistics.
M0443 Air Transportation Operations and Management (3/0): This course looks at comprehensive knowledge of air transportation operations and management. This course is composed of basic concepts, methodologies, systematic analysis and strategic planning issues of air transportation, airline management, and airport planning and administration. Many issues about air transportation industry, airline management and organization, airline marketing, airport design and planning, airport operations and management, air cargo logistics, and aviation safety are discussed.

M0482 Business Administration in Transportation (2/0): The purpose of this course is to introduce key concepts of management and their applications to business administration. In the first half of the semester, fundamentals of management including planning, organization, leading and governance are introduced. In the second half of the semester, students will learn how to write a successful business plan.

M0523 Law and Administration of Communication (3/0): This course introduces the basic concepts/principles of administration law and the content of major transportation administration laws.

M0572 Traffic Control Design (3/0): The purpose of this course is to introduce the theory and methodology of traffic control design. In the first half of the semester, we focus on theories and design methodologies of intersections. In the second half of the semester, we will discuss traffic control issues related to freeways and apply traffic control design software to complete several case studies.

M0573 Rapid Transit System Management (2/0): This course introduces the basic knowledge about operations and management of the mass rapid transit systems. The course provides students with fundamental knowledge on rapid transit system design, train operation planning, safety management, and passenger service quality and innovative marketing.

M0593 Applied Statistics in Transportation (2/2): This course emphasizes the applications of statistical methods to the various topics related to transportation. Two statistical analysis software tools (EXCEL and SAS) are used for data processing and data analysis to learn how statistical methods are applied to the professional field of transportation.

M0671 Transportation Environment Impact Evaluation (3/0): This course introduces overall issues of environment impact assessment (EIA) due to transportation development. Course content includes a comparison of different systems of assessment and their ability to affect environmental acts, land use and traffic impact analysis, city landscape and aesthetics, noise measurement and management, habitat impact analysis, and cultural conservation and its evaluation.

M2289 Travel Behavior Analysis Using Big Data (2/0): The purpose of this course is to introduce theory and practice of Big data and User behavior analysis in the field of transportation business. In the first half-semester, Big data and User behavior analysis are examined. In the second half-semester, other problems are discussed and their linkages with current issues are also explored.

M0692 Transportation Safety Analysis (3/0): This course introduces laws of responsibility related to traffic accidents. Students will learn basic concepts of legal responsibility and legal issues in road traffic accidents. It also teaches students how to assess culpability in traffic accidents by searching for critical evidence in the field.

M0870 International Freight Transportation (0/2): Through instruction and team discussions, students learn about daily operations of global liner and tramp services as well as air cargo & logistics. The course links theory to practice cultivating students’ professional ability in the field of international freight transportation.

M1039 Intelligent Transportation System (0/3): Course content includes fundamental concepts, international trends, ITS-related technologies, application areas and users’ service units, master plans and system architecture, issues of standardization, application cases, and benefit assessments.

M1142 Railway Transportation (2/0): This course introduces various system technologies and forms of railway transportation. The course provides students with fundamental knowledge on railway transportation that will help them in future research or practical work.
M1173 Commercial Vehicle Operation (0/3): This is an introduction to basic structure and management theory of commercial vehicle operation and transportation regulation. The course presents a series of cases studies that offer insights into industrial characteristics and topics and policies for each type of commercial vehicle.

M1747 Sustainable Transportation (0/2): This course explores key issues of sustainability of transportation systems by considering global climate changes. The first part involves understanding the concept 'sustainable development'. Then, students are presented with an introduction to the interrelated disciplines of transportation, environment, technology, ecology, sociology, politics, and economics. Finally, students are required to work in a team to conduct field surveys by using qualitative or quantitative methods to evaluate transportation sustainability in Taiwan.

M1900 Computer Programming (2/2): This course aims to train students to understand basic logical concepts, to develop basic computer programming skills, and to use VB to develop basic computer programs.

M1923 Public Transportation (0/3): This course introduces the elements and operational characteristics of public transportation, including buses, mass transit systems, Paratransit, and new transportation systems such as public bicycle systems. The elements discussed in this course include vehicles, routes, stations, and control and management systems. The alternatives for improving the performance of public transportation are also discussed in this course.

M1924 Seminar on Air Transportation (0/2): This course aims to introduce professional knowledge related to air transportation. Three parts are presented in this course: Part 1: the concepts of air transportation development, the international organization and conventions, traffic rights, aviation safety and global logistics; Part 2: the airline market analysis, operation strategy, fleet management and flight scheduling; Part 3: the air services, airport planning and design, operation and management.

M1925 Practices on Supply Chain (3/0): The purpose of this course is to provide detail presentation of the Practices on the logistics and supply chain. With the knowledge of these practices should enhance the basic understanding of the structure and basic functions of supply chain.

M2016 Operation and Management of Highway Passengers Transport (0/2): This course is designed to improve students’ understanding of the operations and management of transportation, and to increase students’ interest in this academic field. It also provides students with a chance to learn practical knowledge relevant to their future careers and become planners and managers or highway bus operators.

M2155 Traffic Accident Judgment and Analysis (0/3): This course aims to introduce basic knowledge regarding the traffic accident investigation, judgment, insurance, and legal liability. A series of case studies will also be introduced to integrate the practice and theories in order to build the ability to conduct traffic accident judgment and analysis in real world.

M2234 Maritime Shipping and Port Management (0/2): This course introduces the basic concepts of maritime shipping and ports, as well as the main facilities and cargo-handling equipment of the port. We discuss different types of ports, thus giving the students a complete picture of maritime shipping and port management. The course gives the students a better understanding the operation procedures for ships calling at ports. We discuss the stevedoring and storage of cargo at the port, and introduce vessel survey, tonnage measurement, maritime shipping and port operator management and port tariffs structure.

M2287 Tour Planning (3/0): This course considers the use of demand analysis to help student explore focus groups in a market setting involving diverse aspects. Applying text mining, students can also quickly integrate dynamic market information and adequate modifications to formulate well designed trips that fit the needs of customers. Students are required to complete their own exclusive tour plans and itineraries.

M2288 Geographic Information Systems for Transportation (3/0): The purpose of the course is to familiarize students with principles of geographical information system and its applications in
transportation through learning how to use ArcGIS. Students will acquire relevant knowledge through lectures, examinations, discussions, and team projects.

**M2408 Practices of Transportation Business and Management (3/0):** This course mainly introduces the operation and management practice of the transportation industry and explores the related issues of modern transportation industry management. Through practical case studies, practical lectures by industry professionals, company field visits and corporate internships, the course enables students to understand the basic knowledge of the transportation industry management, and to familiarize themselves with the practical operation procedures.

**M2290 Transportation Marketing Using Big Data (0/2):** The introduction of the basic concepts of big data analysis and through domestic traffic information system introduction and practical operation, Students can have the basic concepts and analytical skills of big data analysis after completing the course.

**M2291 Airline Planning and Management (0/2):** The course will address the various air transportation planning and operation. The main purpose is to help students understand the areas, definition, operation and management for air transportation. Let students understand the trends of air transportation planning and related knowledge via case study. It will be the basis for the future related courses.

**V0011 Tourism Management and Operations (0/2):** This course introduces the tourism industry from a business perspective. The first part focuses on tourism marketing and services; the second part highlights service providers, including transportation, accommodations, dining, attractions and destinations; the third part analyzes the impact of tourism on culture, society, and environment and how sustainable tourism can be achieved.

**T0136 Research Seminar (2/0):** This course emphasizes the establishment of undergraduate students' capability of doing independent research in the field of transportation.

**Master’s Program**

**E0769 Mathematical Programming (0/3):** This course introduces how to formulate a general problem in Mathematics. Various types of theorems and their associated algorithms are summarized.

**E1188 Transportation Network Analysis (3/0):** An introduction of basic structure and solution technology of transportation network analysis. The basic theoretical development and solution procedure of each fundamental transportation network algorithm are discussed in the class to provide basic transportation network ability for the student.

**E1208 Transportation seminar (0/2):** The purpose of this course is to introduce key issues relating to transportation in past, present and future worldwide. An interactive question and answer process is performed in this course by using topic discussing, literature reviewing and expert speeches.

**M0115 Multivariate Analysis (3/0):** Multivariate analysis focuses the theorem and its application associated with the tool of SAS. With the real case studies, students may improve their problem-solving abilities. The contents include the basic operation of SAS, concepts of hypothesis, variance analysis(including experimental design), test of normality, discriminate analysis, cluster analysis, factor analysis and SEM.

**M0181 Systems Simulation (0/3):** System simulation is a set of techniques for using computers to imitate, or simulate, the operations of various kinds of real-world facilities or processes. This course will be conducted to 3 parts, which includes basic concepts of system and simulation, general simulation methodologies, and finally, the applications of systems simulation techniques on transportation and traffic engineering fields.

**M0873 Transportation System Analysis (I) (3/0):** This course will introduce the systematic system analysis and its application to the transportation system. A framework of transportation analysis will be illustrated along with all related model components. Theory and specification of disaggregate demand modeling will be discussed, including those of specification and estimate issues.
M0874 Traffic Assignment (3/0): Various traffic assignment problems will be introduced in this course, including the very basic definitions and models to advanced dynamics and/or stochastic assignment problems.

M0924 Transportation Research Methods (I) (2/0): This course emphasizes on establishing graduate students' capability of doing independent research in the field of transportation.

M0925 Transportation Research Methods (II) (0/2): This course introduces transportation research methodology, including literature search, paper critique, data analysis, reference listing, and research proposal writing. Classroom participation and practice is essential. Each group project is expected to develop a 10-page paper qualified for publication.

M1079 Operation Management of Mass Transportation (0/3): This course introduces the planning, operation and management of public transit. The Contents includes data collection, headway determination, time table development, vehicle scheduling, crew scheduling, service design, network design, and future development.

M1464 The Application of Traffic Flow Theory (2/0): Traffic Flow Theory is a basic course of traffic engineering. It is used to describe kinds of traffic conditions. Traffic control models are the most important application. This course includes statistical models, car-following theory, shock wave analysis and queueing theory.

M1688 Spatial Analysis and Location Theory (0/3): This course aims to introduce general regional and spatial theories and analytical methods in order to prepare students to apply systematic analysis capability to analyze city and regional problems for the future. Also, it is planned to incorporate practical case studies to enhance the abilities of independent thinking and research capabilities.

M1692 Solution Algorithms for Transportation Planning (0/3): This course introduces some algorithms that is the foundation of much researches. It includes neural network models, fuzzy theory, gene algorithm and program algorithms etc. The program algorithms also include brute force, divide-and-conquer, decrease-and-conquer, etc.

M1721 Traffic Engineering Practice (3/0): The purpose of this course is to explore the traffic characteristics of the various types of highway and problems they face in urban area. In addition, all the possible improvement measures or policies will be discussed to improve their efficiency and safety. With the comprehensive understanding of the associated methodologies, practices and legal issues, the course should provide students basic ability to handle various traffic problem in urban highway and street system.

M2135 Special Topics on Intelligent Transportation Systems (3/0): The purpose of this course is to introduce key technologies and their applications to Intelligent Transportation System (ITS). In the first half-semester, the front-end data collection, integrated platform and the rear-end applications technologies are reviewed. In the second half-semester, related ITS applications such as DRTS, MaaS and Connected Vehicles emerging with these technologies are discussed and their linkages with Telemetric, Cloud Computing, Big Data and Internet of Things are also explored.

M1983 Applied Data Analysis (0/3): The main content of this course includes the development and evaluations of the following statistical models: (1) multiple regression models, (2) ANOVA models, (3) count data regression models, (4) and classification tree methods. This course emphasizes on the applications statistical methods to transportation topics using statistical software (SAS) for understanding how statists applied to the professional fields of transportation.

M0668 Airport Planning & Design (0/3): This course will introduce general concept and hierarchy of airport design, mechanism and facilities of air traffic control, as well as specific elements involved in airport planning and design, such as site selection, runway configurations, definition and computation of airport capacity and delay analysis. Topics of environmental impact and economic analysis will be also introduced.
DEPARTMENT OF PUBLIC ADMINISTRATION

Degrees Offered: B.A., M.A., E.M.P.P.

Chairman: Yi-ching Hsiao (蕭怡靖)

The Department

The Department of Public Administration covers four major disciplines in the social sciences: law, political science, public administration, and public policy. Courses in law include: Constitutional Law, Administrative Law, Law and Society, Civil Code, Business Law, etc. Courses of political science include: Introduction to Political Science, Comparative Politics, and Western Political Thought. Courses in the area of public administration include: Public Management, Organizational Theories, and Behavior, and Personnel Management. Courses centered on public policy include: Policy Analysis, Political Economics, and Policy Evaluation, etc.

The Master’s Program of Public Policy is designed to cultivate future administrators, policy analysts, and researchers. Graduates will be equipped with substantive knowledge and analytical skills necessary for policy research, such as problem identification, solution formulation, and impact assessment. Twelve full-time faculty members and several adjunct professors offer about thirty graduate courses every year. Course offerings can be categorized as follows: 1) methodological courses, including Research Method and Design, Quantitative and Qualitative Data Analysis, Policy Analysis, and Comparative Public Policy; 2) courses focusing on public law, including Legal Policymaking, Constitutional Policymaking, Seminar in Administrative Law, and Seminar in Administrative Remedies; 3) courses of public administration and organization, such as: Public Organization and Management, Organizational Theories and Designation, and Seminar on Personnel Management; and 4) courses of various policy areas, including Seminar on Communications Policy and Regulation, Seminar on Fair Trade, Seminar on Securities Policy and Regulation, Technology Policy, and Seminar on Ethnic Politics.

Our graduates can consider future careers in the following fields: government agencies, nonprofit organizations, Think Tanks, news and media industry, banks and financial organizations, and congressional staff.

Faculty

Professors
Ming-siang Chen (陳銘祥); Tsong-jyi Lin (林聰吉)

Associate Professors
Chih-wei Chen (陳志煇); Yi-ching Hsiao (蕭怡靖); Charles Chao Han (韓釗);
Chen-yu Huang (黃琛瑜); Irving Yi-feng Huang (黃一峯); Pei-yuan Li (李培元);
Li-hsyang Lin (林麗香);

Assistant Professors
Yi-bin Chang (張一彬); Gillan Chi-lun Huang (黃寄倫); Yu-yin Tu (涂予尹)

Specially Appointed Assistant Professor
Li-wei Cha (詹立煒)

Degree Requirements

The degree requirements of the department are as follows:
1. Requirements for a degree of B.A.:
   A total of 128 credit hours are required for graduation. Of these 128 hours, 87 credit hours are required courses and the remaining 41 credits are electives; 19 of the elective credits have to be selected from courses offered by the Department.

2. Requirements for a degree of M.A.:
A total of 33 credit hours is required for graduation (excluding credits for thesis). Of these 33 credit hours, 4 courses with a total of 9 credit hours are required and the remaining credits are electives. For this program, there are two semesters in each academic year. Generally speaking, the program takes around two and a half years to complete and students must register for a minimum of four semesters before graduation.

3. Requirements for a degree of E.M.P.P.:
A total of 30 credit hours (excluding credits for thesis) are required for graduation. Of these 30 credit hours, 4 courses with a total of 10 credit hours are required and the remaining credits are electives. For this program, there are two semesters in each academic year. This program usually takes two to three years to complete and students must register for a minimum of four semesters before graduation.

Course Descriptions

Undergraduate Courses

A1605 Human Resources Development (0/2): The use of “Human Resource Development” (HRD) began from the 1970s to indicate the shift of treating human resources as assets of an organization. HRD means a strategic method of developing talents with work-related competencies. For organizations, HRD can be divided into Management Development (MD) and Career Management (CM). This course will focus on these two fields to help students learn related theories and skills.

B0033 Essentials of Civil Law (3/3): Civil laws are basic laws that regulate social life on a broad scale. This course introduces basic concepts and popular case studies, with an emphasis on important legal issues in general civil laws, debt, asset rights, and inhabitation.

B0260 Organizational Behavior (2/2): This course introduces theories and applications regarding the behaviors of individuals, groups, and organization systems so as to help the student to develop abilities and skills of management and lay the foundations for advanced study in the future.

B0302 Economics (3/0): This course is designed to give students a basic understanding of economics. We will discuss and research the causes of problems in the modern economy, as well as resource choices and allocation for maximal effects. Theories will be explained with economic conditions and social phenomena of different countries as cases.

B0173 Commercial Law (3/0): This course introduces fundamentals of company laws and regulations of commercial papers, insurance, and overseas business. Regulations on the organizational structure of companies, protection of interest of shareholders, and types and right protection of commercial papers, will be discussed.

B0433 Securities and Exchange Law (0/2): This course introduces a framework for the operation of the capital market. Focus is placed on regulations of security exchanges, including important issues such as company stock buyback, business management, and prevention of insider trading.

M1898 Public Human Resource Management (2/2): This course helps students to learn basic concepts and skills of human resource management in governments, including the major fields of recruitment, selection, HR development and rewarding. It also analyses government personnel policy.

M0036 Public Policy (2/2): This course introduces basic concepts of public policy and the stages involved in policy formation, including policy problem identification, policy design, policy implementation and policy evaluation.

M0048 Comparative Government (3/3): This course introduces basic concepts of public policy and the stages involved in policy formation, including policy problem identification, policy design, policy implementation and policy evaluation.

M0098 Introduction to the Criminal System (0/3): This course provides students with a general knowledge of criminal law, an introduction to criminal law, and criminal procedure punitive power.
M0100 Comparative Personnel Systems (2/0): This online course provides students with concepts and knowledge related to civil service systems in countries such as US, UK, France, Germany, and Japan. The major goal is to help students prepare for the national civil service examination.

M0104 Local Government (2/0): This course discusses from a legal perspective the issues of local Taiwanese government’s organizational structures and operations. Course content includes the history of the local government’s structural changes and the relationship between the central and local governments.

M0130 Administrative Law (3/3): This course covers the legal effects of administrative actions, the main administrative procedures, administrative sanctions, administrative execution and the law relating to administrative grievance and litigation.

M0132 Public Administration (3/3): This course introduces the history, theories pertaining to and methods used in public administration. By guiding students to investigate the major issues of public administration, the course teaches students how to employ theories and techniques to analyze and solve administrative problems in the real world.

M1899 Contemporary Political Thought (2/2): The purpose of this course is to provide students with an introduction to the development and characteristics of western political thought. Both ancient and modern theories of political philosophers are interpreted by applying critical perspectives so as to equip students with the tools necessary to critique the modern political structure.

M0195 Introduction to Law (2/2): This course introduces studies in law with special emphasis on the meaning, functions, and nature of law. Students are expected to learn basic notions and principles of law as well as basic knowledge regarding the current law (positive law) of Taiwan.

M0206 Introduction to Political Science (3/3): The purpose of this course is to provide students with an introduction to the basic concepts and theories in the study of politics. It focuses on the scope and methods of politics, systems of government, political ideologies, democracy, the state, nations and nationalism, global politics, political culture and communication, elections and voting, parties and party systems, interest groups, the legislative branch, the executive branches, the judicial branches, and the policy process. This course will thus enhance students’ understanding of the theory and practice of politics.

M0269 Financial Administration (2/2): This course will cover some basic concept in economics, particularly in government failure. Then, the tax system as well as budgeting system will be introduced. We will also investigate a number of theoretical arguments with regard to the budget reform around the world.

M0470 Policy Evaluation (2/0): This course provides students with intensive knowledge in policy evaluation, the last chain of public policy. The topics covered include major categories of policy evaluation: the evaluation of need, the evaluation of process, the evaluation of outcome, and the evaluation of efficiency, and their methods respectively.

M0556 Logics (2/0): This introductory course covers a wide range of logic and reasoning topics from the philosophy of social science to symbolic logic. It is designed to enhance learners’ reasoning and critical thinking skills through principles of logic.

M0570 Public Management (0/2): This course introduces government divisional management. From the late 70s, new public sector management and the administrative reform movement initiated simultaneously by the government transformed the reform process, environment reform and practice, the process of benefit execution.

M0575 Government and Business (2/0): The purpose of this course is to illustrate the division between government and society and the coexistence between government and economy by applying the theories of organizational interaction and deviation as well as theories of the new corporation.

M0674 Political Economy (0/2): The purpose of this course is to provide students with an introduction to issues in political economy that influenced the global eco-political transformation in the 20th century.
This course will focus on the development of advanced democratic states, the economic policy of transformed states, and methods of developing the remaining developed states. This course will thus enhance students’ understanding of the contemporary eco-political context.

M0747 Strategic Management (2/0): This course is one of the advanced courses in public administration which aims to introduce the evolution of strategic management theories, the importance of organizational management, and its application to the practice of public management.

M1034 Law of Administrative Remedies (0/2): A part of administrative law, this course focuses on how people make claims for compensation from administrative bodies. The reason for the field to be dealt with in a separate course is simply because that it is always impossible, in terms of time and class session, for the course of Administrative Law to cover this last part of administrative law.

M1036 Information Policy and Regulation (0/2): This course investigates the nature and function of information, and goes further by exploring the existing system of law from the perspective of information economy.

M1041 Political Party and Election (2/0): This course provides students with some basic ideas concerning the party system, the electoral system, ethnic politics in Taiwan, campaign strategies, and voting behavior.

M1042 Administrative Ethics (2/0): This course will discuss concepts of ethics in public service, including violations of the ethics code, achieving responsibility, and accountability.

M1179 Nonprofit Organizations (2): The surge of “non-profit organization” (NPO) changed contemporary socio-political culture and public-private boundary drastically. This course will deal with NPO’s institutional and organizational domain as well as its strategic action and management issues. Through these will culminate our conception of socio-political consciousness, public policy development and personal career planning.

M1256 Crisis Management (2/0): This course helps students understand and analyze the meaning of crisis management. It also teaches students how to turn a crisis into an opportunity and to make decisions and change correctly. It helps governments, the enterprises, and the individual solve problems when they face a crisis. At the same time, students are trained to turn bad luck into good fortune.

M1259 Political Communication (2/0): This course introduces the concept of political communication. It covers issues such as how to conduct research on political communication and defines the role and function of the media in emerging democracies, especially in Taiwan.

M1667 Cultural Affairs Administration (2/0): This is an introductory course on arts and cultural institutions in Taiwan. Themes focus on the assessment of the government’s role in art and cultural development, policy and management in the arts and cultural industry, and community cultural planning.

M1770 Policy Marketing (2/0): The concept of policy marketing refers to the application of business marketing to policy planning and implementation. The purpose of policy marketing is to reach compliance agreements with the target population by propagating relevant information to policy stakeholders. This course first introduces key concepts of business marketing. Considering notable differences between government and industry, we then turn discussion to how the theory of business marketing can be applied to the arena of public policy.

M1804 Government Performance Management (0/2): The purpose of this course is to introduce the process of change from bureaucratism to transformational in performance management in the context of government.

M1830 Current Civil Service System (2/0): This course introduces various aspects of the civil service system, including the examination process, appointment, salary, performance rating, retirement and protection, and civil service laws & practices.
M1926 Business Competition and Consumer Protection (0/2): This course introduces rules and regulations concerning market competition and consumer protection. Its purpose is to help students grasp basic knowledge of norms that firms follow when engaging in market competition. Students will also learn about means for recourse for disputes related to consumption.

M1927 Labor Law (0/2): The aim of this course is to increase students’ knowledge of labor laws and relevant cases. The course consists of lectures as well as discussions on specific cases. The lectures are aimed at helping students understand the domestic labor law system and its legal foundation, while the discussions of actual cases will involve each group of students presenting a three thousand-word report.

M1995 E-Governance (2/0): This course introduces the history, challenges, cases, and trends of e-governance. Several topics will be covered: 1) Taiwan’s current e-government initiatives; 2) Program evaluation methods of e-government; 3) Online service delivery systems; 4) e-democracy; and 5) The digital divide. The main purpose of this course is to provide the concepts and methods for public managers to succeed in using ICTs to improve public service quality.

M1996 Social Policy and Social Legislation (0/2): The goal of this course is to understand Taiwanese social policy and its implementation. Based on political and sociological inquiry and centered on governmental institutions and administrations, the course can illuminate the dispositions and possibilities of Taiwanese social policymaking both in the past and the present. Topics also include social welfare theories and the evolution of Taiwanese social welfare systems, i.e. social security, health care, employment programs and pension.

M2047 Congressional Politics (2/0): The purpose of this course is to teach students about the basic theory of congressional politics. Students will also observe the real working of the ROC legislative Yuan.

M2048 Public Opinion Survey (2/0): The aim of this course is to teach students about theories related to public opinion surveys and how to carry out a “scientific” public opinion survey.

M2050 Public Policy Case Studies (0/2): This course is designed for students with a basic understanding of public policy theory. By following case studies of Harvard Business School, the course helps students integrate public policy theory with policy cases.

M2051 Media Politics (2/0): The purpose of this course is to teach students about media politics. Questions addressed in this course include how to conduct research on political communication and what is the role and function of the media in emerging democracies especially in Taiwan.

S0467 Applied Statistics (2/0): This course is intended to strengthen students’ knowledge in statistics, primarily in how to utilize statistical software to analyze statistical issues and basic calculations. The software EXCEL will be used in this course.

T0037 Psychology (0/2): The course is designed to give students the fundamental concept of psychology, as well as the general knowledge of human behavior. Topics will include perception, consciousness, memory, personality, intelligence, emotions, problem solving, social interactions, and pressure management. Emphasis will be placed on the science of psychology and the ways psychological science has impacted our understanding of human nature and behavior.

T0048 Civic Education (2/0): This course is to present the emergence of civil society and how citizens participate in civil society through different methods as well as devote themselves to make civil society better.

T0070 Sociology (3/0): The aim of this course is to present an integrated account of how the discipline of sociology contributes to our understanding of human beings’ collective life i.e. dynamics, relationships, process and trends of collective action in contemporary society. Individual as well as societal issues will be addressed under sociological reflexivity and modernity perspectives.

T0081 Research Methods (0/2): This course deals with the following: politics and analysis, development of research questions, measurement, data collection through questionnaires and interviews, data analysis-coding, data analysis-frequency, and data analysis, as well as cross tab and correlation, and report writing and presentation.
T0696 Constitutional Law (2/2): This course comprises two sections. In the first half of the semester, we discuss fundamental human rights. In the second half of the semester, we introduce the operation of governmental organizations.

T0805 Business and Law (2): The major theme of this course is to introduce basic legal concepts related to rights and obligations of an enterprise under the Civil Code and Company Act, regulation mechanisms for enterprises, corporate governance and management, employee disputes, etc. This class will also refer to real-life cases to enable students to integrate theory with practice.

T0806 Life and Law (2): In this course, we will introduce fundamental legal concepts related to common legal problems in our daily life. According to legal traditions, we divide the course into three sections. The first section concerns public law. In this section, topics discuss range from administrative organizations to human rights in constitutional law. The second section pertains to civil law, with topics ranging from buying a coke to consumer protection. The third section relates to penal law. In this section, issues discussed range from criminal behavior to prosecutor and court acts. Students will be divided into four or five groups, and each group shall submit three summary reports.

T0808 Democratic Politics (2): This course provides a comprehensive introduction to the study of democratic politics. It covers classical topics such as: the concepts of politics, definitions of democracy, models of democracy, democracy and globalization, and democracy and its critiques. This course also examines a number of contemporary issues as well as the future prospects of democratic politics.

T0809 Civil Society (2): This course introduces the basic concepts of civil society and general rights and duties of citizens. It also discusses how a civil society helps to advance social justice, accumulate social capital, strengthen democracy, and increase its capacity to deal with crisis and fight against climate change. Last, the course discusses the effects of the development of social media on civil society.

T0811 Civil Participation (2): This class introduces various theories of public participation through the classic political thought to contemporary political science. Also, some approaches to participation in political practice will be explored in the course. The course also explores real cases of civil participation in the modern policy cycle that have occurred abroad or in Taiwan.

T0813 Civil Culture (2): What does civil society mean? Do we have a global civil society? What is the role of citizens in the contemporary world? Are human rights universal or are they based on cultural differences? Does culture matter in international relations and what is its impact? These are the questions we will address during the course. In addition, students will learn general information about civil society concepts and explore different dimensions on the subject, with particular focus on norms and activities.

T0873 Gender, Life and Law (2): This course introduces legal knowledge and practical in major legal fields, such as family law, civil law, and criminal law for students to gain a better grasp of legal issues pertaining to gender equality and daily life. For example, is abortion a crime in the ROC? What legal steps can one adopt to deal with domestic violence? Course lectures will allow students to explore the legal world through a number of interesting cases.

T2207 Constitutional Law and Human Rights (2): This course discusses the defense of human rights based on the Constitution of the Republic of China, including previews of real life cases in Taiwan.

T2211 Information and Laws (2): This course starts with the role of law in the digital era and introduces the legal system in the field of information technology. It covers Internet IPR laws, telecommunications laws, electronic signature laws, computer-processed personal data protection laws, laws for consumer protection in electronic commerce, laws for cybercrime, etc.

T2610 Intellectual Property Rights and Law (2): This course introduces the impact brought about by the advancement of technology upon the legal system and how the system can be adjusted to resolve the issues emerging from the interaction between technology and law.

Master’s Program
B0110 Policy Analysis (2/0): Policy analysis is a social and political activity consisting of public problem identification and solutions made by policy analysts. This course provides different approaches and general methods of policy analysis. On the basis of policy analysis theories, policy context, values, discourse, and citizenship will be discussed, and a framework of policy analysis will be built.

M0476 Organization Theory and Management (0/2): This course introduces the managerial implications of organizational theories and concepts that are necessary for managers to formulate effective strategies to cope with hyper-competition. In addition, the most recent developments in organization theories such as organizational economics, organizational ecology, institutionalism, and network organizations are also addressed to provide an in-depth understanding of their meanings and implications for managing organizations.

M0800 Business Ethics (1/0): The current course introduces the ethical relationships between the business and the society, and help students understand the multi-ethical obligations of businesses toward stakeholders, inclusive of employees, stockholders, competitors, community, and environment.

M0911 Organizational Development and Analysis (2/0): This course aims to help students to learn related theories and concepts of organizational development and skills of organizational diagnostic. Through the exercises and site visits, students can prepare themselves to external consultants in the future.

M1027 Comparative Public Policy (0/2): This course is intended to provide students with intensive knowledge regarding comparative public policy. Special treatment is given to the concept of comparative method and its use in public policy research, the usefulness and weakness of comparative method, and research design based on comparative method. Upon finishing the course, students are able to develop their own research design based on comparative method.

M1236 Seminar on Political Behavior (2/0): This course provides students with information on the major forms of political behavior, including voting behavior, political psychology, public opinion, and political communication.

M1252 Seminar on Public Management (0/2): According to the classification of Grover Starling, public management consists of three theses: political management, program management and resource management. Specifically, political management contains political-law context of public administration, intergovernmental relationships, and administration responsibility and ethics. Program management refers to planning, decision making, organizing, leading and executing. Resource management relates to human resources management, public financial management and information management.

M1341 Research Method and Design (3/0): Methodology and research design are basic skills for graduate students. The themes of this course include the process of scientific research, quantitative methods, qualitative methods, data analyses, and research designs.

M1357 Methods of Quantitative Analysis (0/2): The course is aimed at using the numerical models to tackle the public policy issue. We want to target how to design empirical models to analyze the public policy problems and utilize the statistical software for assessment. The primary software used is SPSS.

M1388 Qualitative Methods (2/0): This course aims at using the basic concepts and research methods of the qualitative approach. By means of reading the assigned articles and doing field studies, the students are expected to get acquainted with the skills and techniques of analyzing and interpreting the phenomena in the daily life of our society.

M1636 Program Evaluation (2/0): This course is intended to provide students with intensive knowledge regarding policy evaluation, the last chain of public policy. The topics covered include major categories of policy evaluation: the evaluation of need, the evaluation of process, the evaluation
of outcome, and the evaluation of efficiency, and their methods respectively. Special treatment is given to the evaluation of outcome, and the evaluation of efficiency.

**M1714 Special Course in Business Law (0/2):** This course discusses important issues and regulations of business management with a focus on their revised contents and background of revision.

**M1835 Public Opinion Survey and Data Analysis (2/0):** The purpose of this course is to teach students how to collect individual data through public opinion surveys and to conduct data analysis correctly using SPSS.

**M1950 Seminar on Administrative Law (2/0):** The purpose of this class is to introduce the basic concepts of administrative law. The goal is to equip students with the ability to accomplish a thesis that can integrate the knowledge of administrative law and public policy analysis.

**M1964 Seminar on EU Governance (2/0):** The purpose of this course is to provide students with an introduction of the basic concepts and theories in the study of EU politics. This course will focus on the scope and methods of EU politics, systems of EU government, and EU politics. This course will thus enhance the students’ understanding of the theory and practice of EU politics.

**M1970 Public Policy Research (0/2):** The purpose of this course is to provide students with an introduction to core concepts and theories in the study of public policy. This course will focus on the scope and methods of public policy, theories of decision-making, public policy and political ideologies, the policy process, and policy and the performance of political systems. This course will thus enhance students’ understanding and ability to analyze theories and practices in public policy.

**M2011 Local Government Management (0/2):** The course introduces the works of local government under the institutional change on dimensions of social, political, economic and culture. Contents are including the organization and citizen participation of local government, industrial development and local government, the relations of local government and parliament, governance of cross-boundaries institutions, the reform of personnel system, and finance of local government.

**M2125 Seminar on Public Administration Theories (0/3):** This course will focus on the development of Public Administration theories. We will review the important references regarding the traditional theory, new public administration, new public management, and the post NPM era.

**M2126 Seminar on the Theories of Public Policy (0/3):** This course aims to introduce policy theories, analytical approaches, and concepts involved in public policy process. Based upon a selection of readings, students will have opportunities to discuss the significances, contributions, and limits in practical applications of theories. Students will also gain the ability to use these in their own research.

**M2233 Organizational Behavior Assessment (0/2):** This course will help students to understand the knowledge of behavior in organization and how to conduct empirical surveys to assess organizational behavior. Discussion topics will include individual, group, and organizational levels of behaviors.

**M2268 Seminar on Decision Making (2/0):** This course is designed to improve one's decision making ability, and will introduce normative, descriptive and prescriptive approaches to decision making. It will also touch upon group and organization decision making.

**T0081 Research Methodology (3/0):** This course includes many topics regarding research methodologies in social science, particularly in the quantitative method. Formation of research questions, literature review, research methods, and the writing of research papers are all covered in this course. We also require students to work on a real research paper at the end of the semester.
DEPARTMENT OF MANAGEMENT SCIENCES

Degrees Offered: B.B.A., M.B.A., EMBA, Ph.D.

Chairman: Ruey-chyn Tsaur (曹銳勤)

The Department

The department was established in 1972 when the Graduate Institute of Management Sciences began offering a master’s degree in management sciences with a focus on system analysis. Two more major fields—management sciences and management information systems—were added in the following year. In 1975, the department began to offer the first Ph.D. program in management sciences in Taiwan. An option to major in managerial economics was added to the master’s program in 1978; and the management information systems program was expanded and became the Graduate Institute of Information Engineering in the same year. In 1992, the system analysis program was expanded and became the Graduate Institute of Management Information Systems, while the managerial economics program was expanded and became the Graduate Institute of International Business. In 1993, the master’s program was divided into two groups: Group A is a quantitative group and group B is a general management group. In 1998, the department offered an undergraduate program in management sciences. In 2002 the department was transformed into two divisions: the Department of Management Sciences and Decision Making that offers the undergraduate degree, and the Graduate Institute of Management Sciences that offers MBA, EMBA, and Ph.D. degrees. In 2011, the Department of Management Sciences and Decision Making, and Graduate Institute of Management Sciences were unified to become the Department of Management Sciences that offers undergraduate, MBA, EMBA, and Ph.D. degrees.

Faculty

Chair Professor
Horng-jinh Chang (張紘炬)

Professors
Pei-chi Lii (李培齊); Shu-hsien Liao (廖述賢); Hsu-shih Shih (時序時);
Chung-chu Chuang (莊忠柱); Ruey-chyn Tsaur (曹銳勤); Shui-lien Chen (陳水蓮);
Kuo-ren Lou (婁國仁); Yen-sen Ni (倪衍森)

Associate Professors
Hsu-hua Lee (李旭華); Chang-ching Lin (林長青); Han-jen Niu (牛涵錚);
I-fei Chen (陳怡妃)

Assistant Professors
Chia-Chi Wu (吳家齊)

Professors Emeritus
Wei-tzen Yang (楊維楨); Wen-tao Huang (黃文濤); Liang-yu Ou-Yang (歐陽良裕);
Hai-ming Chen (陳海鳴)

Degree Requirements

The Department of Management Sciences and Decision Making offers the undergraduate degree, and the Graduate Institute of Management Sciences offers MBA, EMBA, and Ph.D. degrees.

1. Requirements for a B.A. in Management Sciences and Decision Making:
   Completion of 128 credits of courses, including 82 credits of required courses and 26 credits of elective courses, where at least 30 credits of elective courses have to be selected from courses offered by the department.
2. Requirements for a Master’s degree in Management Sciences:
Completion of 39 credits of courses, including 9 credits of required courses. Students are also required to submit a written thesis completed under the supervision of a faculty member and pass an oral examination.

3. Requirements for an EMBA Master’s degree in Business Administration:
Completion of 36 credits of courses, including 10 credits of required courses offered by the department. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

4. Requirements for a Ph.D. degree in Management Sciences:
36 credits of coursework are required, including 12 credits of the required courses. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination. At least two research papers should be published before the doctoral dissertation, including at least one research paper published in any journal listed in SCI, SSCI, A&HCI or E.I., and at least one research paper published in another journal.

Course Descriptions

Undergraduate Courses

A1376 Spoken and Written Chinese Expression (0/3): This course hones students’ skills of expression in the Chinese language.

B0033 Essentials of Civil Law (3/0): This course discusses the Civil Law and its development.

B0066 Investment Decision Analysis (3/0): This course introduces investment analyses and strategies.

B0130 Intermediate Microeconomics (3/0): This course covers major microeconomic concepts, theories, tools and their applications. The goal is to provide students with a better understanding of analytical methods used in microeconomics so as to view the world from a more objective perspective.

B0260 Organizational Behavior (3/0): This course offers a basic model in organizational behavior.

B0302 Economics (2/2): This course teaches elemental theories and the development of economics.

B0373 Intermediate Macroeconomics (0/3): This course introduces major macroeconomic concepts, theories and their applications. The goal is to provide students with a better understanding of today’s economic environment so as to explain the past and predict the future.

B0416 Personal Finance (3/0): This course focuses on the concept of financial investment and wealth management including the understanding of related investment laws and asset transmission decision from the tax-saving viewpoint.

B1105 Advertising Marketing and Research (3/0): Global Advertising Strategies examines how experienced marketing professionals help companies gain profit across different borders and cultures. Consumer market research is a form of applied sociology that concentrates on understanding the behaviors, predilections, and preferences of consumers in a market-based economy. This course attempts to explore the effects and comparative success of marketing campaigns, and moreover, emphasizes the integration of theory and practice.

E1034 Introduction to Computers (2/2): This course provides a basic knowledge of information and its development.

M0001 Retailing Management (3/0): This course studies important activities from institutional, functional and strategic perspectives, including business activities involved in the sale of goods and services to consumers.
M0003 Human Resources Management (0/3): This course provides theories of human resource management.

M0066 Production and Operations Management (3/0): This course gives an overview of production and operations management, including its activities, concepts, and analyses.

M0115 Multivariate Analysis (0/2): The following topics are included in this course: principal component analysis, canonical correlation, discriminate analysis and cluster analysis.

M0121 Service Management (0/3): This course provides a framework of service activities that integrate marketing, operations, and human behaviors as central to effective service management. In addition, the combination of texts, short cases, and readings make this course suitable for helping each student to become a good service manager.

M0142 Marketing Management (0/3): This course teaches the application of management in marketing.

M0153 Operations Research (3/0): This course studies basic methods and applications thereof.

M0188 Sampling Methods (0/2): This course analyzes different methods of sampling and their application.

M0271 Financial Management (3/0): This course is an application of financial management.

M0286 Project Management (0/3): The practice and theory used in this course pertains to five processes (initiate, plan, implement, control, and close) and nine knowledge areas (project integration, scope, quality, time, cost, human resource, procurement, communication, and contract management).

M0339 Accounting (I) (2/2): This course provides basic knowledge on accounting.

M0344 Data Processing (2/2): This course helps students operate computers.

M0404 Management Mathematics (0/3): This course is an application of mathematical approaches in management.

M0405 Management (3/0): This course teaches theories and practices of management.

M0477 Quality management (3/0): This course discusses theories of quality control in business.

M0500 Decision and Systems Analysis (0/3): This course offers a general view of managerial decision making with methods and applications.

M0517 Statistics (2/2): This course teaches methods and theories of statistics.

M0719 Bayes Methods in Statistics (3/0): Basic Bayes framework is introduced in this course. Two main topics, Bayes estimations of parameters and Bayes decision rules, are emphasized. Topics related to Monte Carlo Markov Chains (MCMC) methods are also discussed.

M0746 Planning and Management (3/0): This course teaches essential theories and methodologies in carrying out projects and plans.

M0848 Managerial Economics (0/3): This course introduces basic theories related to managerial economics. It is designed to enable students to understand the economic surroundings of business and managerial knowledge related to economics.

M1103 Knowledge Management (3/0): This course focuses on exploring theories and applications of knowledge management.

M1104 Supply Chain Management (3/0): This course focuses on how to manage supply chains, including related concepts, strategies, and models. It covers a comprehensive breadth of supply chain
topics, and addresses major challenges in this area.

M1229 Brand Management (2/0): As the value of branding is gradually recognized in the context of competitive markets, a variety of firms increasingly emphasize the significance of brand for their competitive advantages. This course aims to incorporate contemporary developments and well-established concepts to provide students fundamental frameworks and techniques of brands, brand equity, and strategic brand management to make better managerial decisions on related topics.

M1564 Analysis of Technological Industry (0/3): This course integrates technology management and industrial analysis to explore how technological industry develops in an uncertain environment. Thus, different theories and analysis methods are introduced to students. Case studies are also discussed in class.

M1570 Applied Statistical Software (3/0): Computer software has changed the nature of quantification research and statistical analysis. The software SPSS is designed to carry out large scale quantification research, data processing, and statistical analysis. The introduction of SPSS software applications will help students establish a framework of statistical knowledge and analysis ability.

M1746 Fund Investment Management (0/3): This course introduces the product and investment process of current mutual funds available on the domestic and foreign markets. The evaluation methods of various mutual funds will also be discussed.

M1776 Advanced Business Software (3/0): Since quantitative models have lent themselves to computerized solutions, some popular, accessible software packages, such as MS Excel and SPSS, begin to be extensively utilized in statistics, management science and data mining settings. This course aims to introduce these software packages to address the managerial decision-making problems, with benefits of information technology instead of tedious manual calculation.

M1861 Market Survey and Research (0/3): This course offers a solid coverage of the most important parts of the theory and applications of marketing surveys. The major contents of this course include industrial analysis, statistical program application, data collection, the process of marketing surveys, and commercial briefing. Students will be divided into groups to finish a marketing survey report in which they will require to use statistical methods. In addition, each student is required to submit a report based on lecture content.

M1862 Security Analysis and Practice (0/3): This course introduces many financial instruments and analyzes expected return and risk for these financial commodities. In addition, this course will explain and analyze how these financial instruments work in the real world.

S0191 Regression Analysis (3/0): This course discusses the application of mathematical theories to statistical regression.

S0325 Calculus (2/2): This course covers basic concepts of limits, differentiation and integration and integration of functions of one variable, infinite series, functions of several variables, partial derivatives, and multiple integrals.

Master's Program

B0260 Organizational Behavior (0/3): This course discusses characteristics of organizations and their related subjects.

M0066 Production and Operations Management (3/0): This course addresses the problem of integrating across a wide span of activities including production functions, warehousing functions, transportation, and marketing interface. Moreover, some popular and interesting issues will be discussed, such as productivity measurement and competitive strategies, forecasting, product and service designs, capacity planning and process alternatives, location selection and facility layout, job design, inventory management, aggregate planning and master production schedule (MPS), MRP and ERP concepts, and scheduling methods.
M0142 Marketing Management (0/3): This course requires students to be familiar with activities for implementing, monitoring, and controlling marketing strategic programs. Discussions also include ethical issues in the development and implementation of strategic marketing programs.

M0154 Operations Research (I) (3/0): This course provides a scientific approach to the analysis and solution of managerial problems. Essentially, this approach involves linear programming, mathematical programming and probabilistic models.

M0155 Operations Research (II) (0/3): This course offers a scientific approach to the analysis and solution of managerial problems. Essentially, this approach involves linear programming, mathematical programming and probabilistic models.

M0188 Sampling Methods (0/3): This course analyzes different methods of sampling and their applications.

M0271 Financial Management (3/0): This course provides an introduction to the financial environment, value and risk, capital budgeting, capital structure, and working capital management.

M0348 Information Management (0/3): The course offers a contemporary overview of information technology and its applications. Some spreadsheet-based and web-based examples are investigated.

M0391 Management Theory (3/0): This course emphasizes classical human relations, human resources, and behavioral and quantitative management methods. Content includes planning, organizing, leading and controlling, the employment cycle, and organization design and motivation.

M0719 Bayes Methods in Statistics (3/0): The Basic Bayes framework is introduced in this course. Two main topics such as Bayes estimations of parameters and Bayes decision rules are studied. Topics related to Monte Carlo Markov Chains (MCMC) methods are also discussed.

M0801 Human Resource Management (0/3): This course emphasizes basic human resource functions of both personnel specialists and operating managers. Critical issues include selection, training, compensation, performance appraisal and discipline.

M1103 Knowledge Management (0/3): This course focuses on exploring theories and applications of knowledge management.

M11788 Financial Econometrics (3/0): Products based on financial derivatives have become an indispensable tool for risk managers and investors in recent years. Insurance products have become part of almost every personal and business portfolio. An increasing range of securities allows risks to be hedged in a way that can be closely tailored to the specific needs of particular investors and companies. The ability to handle efficiently and exploit successfully the opportunities arising from modern quantitative methods is now a key factor that differentiates market participants in both the finance and insurance fields. This course aims to provide an introduction to quantitative finance. More precisely, it presents an introduction to the mathematical framework typically used in financial modeling, derivative pricing, portfolio selection and risk management to increase corporation value.

M1205 Mathematical Methods for Management (3/0): This is an advanced course in finite mathematics, such as g-inverse, (semi) positive definite, etc., matrix differential equations, and other topics.

M1469 Investment and Financial Analysis (3/0): This course introduces investment theory and investment practice, and emphasizes the risks of financial commodities purchased by financial institutions and individual investors.

M1608 Industrial Statistics and Quality Control (I) (3/0): The first part of this course involves subjects about the use of modern statistical methods for quality control and improvement. The course covers statistical process control tools, process control charts, process capability analysis, acceptance sampling and experimental design for quality improvement.

M1609 Industrial Statistics and Quality Control (II) (0/3): The second part of this course
emphasizes reliability engineering. Reliability engineering deals with the study of reliability: the ability of a system or component to perform its required functions under stated conditions for a specified period of time. This course is designed to provide students with the tools needed to better understand the factors that cause components and systems to fail. These tools include probabilistic methods to assess time to failure distributions, laboratory tools to conduct and identify failures causes, reliability prediction, Weibull analysis, reliability testing, accelerated life testing, and computer models to identify system failure modes.

M1732 Business Forecasting and Applied Econometrics (0/3): This course introduces forecasting tools and applied methodologies for financial and economic research.

M1769 Capital Budgeting and Valuation (0/3): A corporation’s secret to success is to increase value through its operations. However, corporations should be concerned with the problem of how financial resources available to a firm should be allocated to the many possible investment projects if they are to survive and prosper. The purpose of this course is to evaluate the investment projects in the language of the business manager on three building blocks of decision criteria, namely, preferring more expected return to less risk, or less risk to more risk, or an amount of cash earlier to same amount of cash later. Additionally, there are different valuation methods to be introduced inclusive of the concept of modern exotic derivatives such as real options for maximizing the corporation value.

M1848 Green Supply Chain Management (0/3): Green supply chain management (GSCM) has been emerging as an important issue in the last few years. The purpose of this course is to describe the common framework of the GSCM and its impact on industries. Course topics also include those factors that influence the company to adopt the GSCM, i.e. codes from EU, and methodologies for GSCM implementation within the company. This course also demonstrates some examples of GSCM application in Taiwan’s electronic industry.

S0775 Mathematics Writing (1/0): This is an introductory English mathematics writing course, which aims to expand students’ paragraph-writing skills to essay-writing. Class activities include lectures, writing exercises, small-group and whole-class discussions, as well as individual and group presentations.

M1947 Seminar in Management Sciences and Decision Making (1/1): This course invites practitioners to share practical experiences with students.

M1948 Engineering Economic Analysis (3/0): This course helps engineers in performing analysis, synthesizing, and coming to a conclusion or making a decision as they work on projects of all sizes. These decisions involve the fundamental elements of cash flow of money, time, and interest rates. Many tools for evaluating alternatives and making decisions on real-world projects are introduced.

S0466 Applied Regression Analysis (0/3): This course analyzes applied regression and its application.

T0081 Research Methodology (0/3): Practice and theory in this course will be related to research enquiries and practice, research theory, research variables, research structure, research analysis, research results and discussions.

T0086 Technology Management (3/0): This course discusses the process of technological innovation, technological innovations and strategic planning, technology transfer, research and development management, technological entrepreneurship and new ventures, technological change and organizational structure, managing information technology, economic analysis and methodologies in the management of technology.

M0477 Quality Management (3/0): This course enables students to learn approaches of quality management research by studying critical content of quality management.

M1512 Service Management (3/0): Students will obtain a comprehensive picture of service management and how to improve service quality.

M0747 Strategic Management (0/3): This course introduces the basic concept of strategy formulation in the competitive environment around the world. All discussions will be accompanied by case studies.
B1186 Theory Seminar of Business Management (3/0): This course focuses on enterprise management practices. Students will gain experience and expertise in the field of industry management, which will help them in planning for their future careers.

T8000 Thesis (0): This is a required for students who are in the process of writing a thesis.

EMBA Master’s Program

M0003 Human Resource Management (3/0): This course emphasizes basic human resource functions of both personnel specialists and operating managers. Critical issues include selection, training, compensation, and performance appraisal and discipline.

M0066 Production and Operations Management (0/3): This course gives an overview of production and operations management, including its activities, concepts, and analyses.

M0142 Marketing Management (3/0): This course introduces the application of management in marketing.

M0271 Financial Management (0/3): This course includes an introduction to the financial environment, value and risk, capital budgeting, capital structure, and working capital management.

M0747 Strategic Management (0/3): This course offers a discussion on organizations’ long-term strategic directions.

M1103 Knowledge Management (0/3): This course focuses on exploring theories and applications of knowledge management.

M1743 Total Quality Control and Management (0/3): This course introduces students to the history of quality management; company-wide quality control; plan, do, check, and action; quality control; quality assurance; quality management with integrative approach; the International Standard Organization (ISO); and statistical quality control.


M1848 Green Supply Chain Management (3/0): Green supply chain management (GSCM) has been emerging as an important issue in the last few years. The purpose of this course is to describe the common framework of GSCM and its impact on industries. Course topics also include those factors that influence the company to adopt the GSCM, i.e. codes from EU, and methodology for GSCM implementation within the company. This course also demonstrates some examples of GSCM application in Taiwan’s electronic industry.

M1939 Private Pension Fund Management (3/0): The following issues will be introduced and discussed in this course: (1) Taiwan’s pension fund systems, including public and private systems; (2) basic concepts of pension fund systems and management, including DB, DC, and hybrid pension systems; (3) comparison among major international pension systems, including that of the United States, Singapore and Hong Kong; and (4) the pension fund management philosophy, including in-house management and mandate.

M1940 Product Innovative Design and Development Management (0/3): Topics include introducing innovative design processes and how to implement product innovation tools in design and development management. TRIZ methodology is highlighted and discussed. Software based on TRIZ concept is given to students as a tool to complete a team project at the end of the course. Some real-life cases are also discussed in the course.
T0081 Research Methodology (3/0): This course aims to instruct and present theories and practices of research methodology.

T0086 Technology Management (3/0): This course discusses the process of technological innovation, technological innovations and strategic planning, technology transfer, research and development management, technological entrepreneurship and new ventures, technological change and organizational structure, the management of information technology, economic analysis and methodologies in the management of technology.

T8000 Thesis (0): This course is required for students who are in the process of writing a thesis.

Ph.D. Program

M0115 Multivariate Analysis (0/3): The following topics are included in this course: principal component analysis, canonical correlation, discriminate analysis and cluster analysis.

M1210 Special Topics on Statistical Applications (0/3): This course discusses methods and theories of applied statistics and introduces some statistical papers to students.

M1211 Seminar on Applied Management Science (3/0): This course discusses research subjects on modelling and theory and application of management sciences.

M1212 Special Topics on Competitive Advantage of Human Resources (0/3): This course analyzes the role of employees in management from a strategic view and resource-based view and explores how to create a competitive advantage to achieve the goals of an organization through HR planning and policy development. The course outline is as follows: 1) Understand the context of organizations and analyze the opportunities and threats from their external environment; 2) Evaluate the strength and weakness of organizations and develop competitive human resource strategies at the corporate, business and functional levels; 3) Analyze the organization’s human capital, which contributes to the distinctiveness of an organization; 4) Develop and train the human capital of competitive advantage. 5) Compensation strategy and human competitive advantage; 6) The integrated framework of human competitive advantage; and 7) The practice of HR strategies to create competitive advantages.

M1611 Special Topics on Management (3/0): The purpose of this course is simply to equip students with the capability of conducting academic research in the management field. For the achievement of this purpose, students are requested to read academic articles in the subject of management. The articles will be assigned throughout the semester. All students will be expected to read the articles in order to participate in the discussion. By the end of this course, students ought to complete a research proposal.

M1725 Seminar on Knowledge Management (0/3): This course provides an aim and scope of problem domain, theories, and methodologies on knowledge management research area. By doing so, students can learn knowledge related to management subjects by integrating different aspects of practical events and theoretical models/architectures in terms of research.

M1782 Topics in Multi-criteria Decision Analysis (0/3): This course provides an overall picture of multi-criteria decision making with theories, methods, and applications. Topics are broad, including multi-attribute decision making, multi-objective decision making, and group decision making. Some connections among the above three areas are also involved to develop a decision support system.

M1838 Topics on Stochastic Models (3/0): This course explores problems of several stochastic models, such as bath-tub hazard model, unsupervised masked system and some generalized censoring schemes. We posit several problems and try to solve them through discussions with students.

M1842 Six Sigma Management (3/0): The practice and theory of Six Sigma Management will be related to the DMAIC approach (Define, Measure, Analyze, Improve, and Control) and relevant quality management.

M1941 Seminar (I) (2/0): This course offers discussions of individual topics.
M1942 Seminar (II) (0/2): This course offers discussions of individual topics.

M1943 Numerical Methods and Simulations in Finance (0/3): This course introduces numerical methods and simulations in finance, including least squares, nonlinear equations, optimization, interpolation, numerical integration and differentiation, ordinary differentiation, partial differentiation, fast Fourier transform, random numbers and simulations.

M1944 Fuzzy Sets and Their Applications (3/0): Fuzzy Set Theory and its applications describe fuzzy set theory as a very powerful model that can cope with a large number of uncertainties in real-life situations. Because of its generality, it can be well adapted to different circumstances and contexts. This course presents an up-to-date, comprehensive and readable treatise on fuzzy set theory and its applications. It is intended for students who major in engineering and computer science. The course is divided into two parts: fuzzy mathematics and applications of fuzzy set theory. The first part covers basic definitions for fuzzy sets, the extension principle, fuzzy measures, fuzzy relations, fuzzy graphs, fuzzy analysis and possibility theory. The second part describes fuzzy control, data analysis and a large area of applications in management and engineering.

M1945 Workshop in Investment Research (3/0): This course will cover paper reading, paper discussion, possible research topics, and relevant methodologies in the area of investment research.


M0190 Special Topics on Sampling Theory (3/0): Using various precise sampling designs in combination with appropriate statistical analyses, students are to write papers in marketing research, consumer behavior research, and organizational behavior research. This course emphasizes thesis design and development. Students are required to have a thesis topic, a research proposal and a thesis draft prior to class. This course involves active work toward completion of a final thesis draft that is publishable, which will also be the final paper for the course.

M1974 Seminar on Advanced Decision Models (3/0): Decision making is essential in business and engineering. In this class, different kinds of decision making models will be discussed, including fuzzy decision making methods, grey decision models, TOPSIS, AHP, DEA, factor analysis, clustering methods and their applications. This course can help students possess an ability in multi-decision making.

M1975 Workshop in Behavior Finance (3/0): This course introduces topics on behavior finance through reading relevant academic papers and relevant books and articles. In addition, related research methodologies are introduced in order to link behavioral finance with empirical finance.

B0124 Econometrics (3/0): This course focuses on how to specify the quantitative model and how to estimate and test the parameters of sample data. Furthermore, this model is used to predict and analyze economic data.

S0467 Applied Statistics (3/0): Course content includes basic probability concepts, statistical sampling, statistical inferences, nonparametric procedures, goodness of fit, and linear statistical models.

T0102 Seminar (2/2): This course offers a discussion of individual topics.

T8000 Thesis (0): This is a required course for students who are in the process of writing a dissertation.
BACHELOR’S PROGRAM IN GLOBAL FINANCIAL MANAGEMENT (ENGLISH TAUGHT PROGRAM)

Degrees Offered: BBA

Chairman: Yun-yung Lin (林允永)

The Program

The Bachelor’s Program in Global Financial Management (English Taught Program) was established in 2015. All courses in this program are lectured in English, in accordance with our university’s internationalization education concept. Our objective is to bring up local students and overseas students’ international finance field of vision by providing financial management courses that match the trend nowadays and practical practices, and also collocate with versatile general core courses.

Faculty

Professors
Chi-Bin Cheng (鄭啟斌); Chien-liang Chiu (邱建良); Wen-shuenn Deng (鄧文舜);
Chun-hung Lin (林俊宏); Yi-chen Lin (林亦珍); Jyh-jiuan Lin (林志娟);
Ku-jun Lin (林谷峻)

Associate Professors
Hung-kun Chen (陳鴻崑); Chien-chih Lin (林建志); Pei-chien Lin (林佩蒨);
Yun-yung Lin (林允永); Sonya Hsing-yin Wen (文馨瑩); Sue-chin Yang (楊斯琴)

Assistant Professors
Cheung-sum Lu (路祥琛); I-Ting Lu (呂伊婷); Ren-he Wang (王仁和)

Degree Requirements

The Bachelor’s Program of Global Financial Management (English Taught Program) offers Bachelor of Business Administration degree: Completion of 128 credits of courses, including 89 required credits courses and 39 selective credits from the business and international finance courses.

Course Descriptions

Undergraduate Courses

**B0130 Intermediate Microeconomics (3/0):** This course covers economic models, Short-run and Long-run distinction, tax incidence analysis, strategic equilibrium input demand, capital and the rate of return, and optimal resource allocation overtime.

**B0263 Money and Banking (2/2):** This course covers the nature and functions of money and finance, commercial banking, central banking, monetary theory, and international monetary relations.

**M0271 Financial Management (3/0):** This course analyzes the underlying theory, principles and techniques used in financial management to maximize the value of the firm. Topics explored include discounted cash flow analysis, risk and return measurement, capital budgeting, the cost of capital, capital structure theory and leverage policy, dividend policy, long-term financing policy, working capital management, financial statement analysis, mergers, holding companies, and multinational financial management.

**B0302 Economics (2/2):** This course covers the art and science of economic analysis, some tools of economic analysis, market systems, economic decision makers, elasticity of demand and supply, labor markets and labor unions, etc.
B0373 Intermediate Macroeconomics (3/0): This course covers the self-adjusting economy, classical macroeconomic theory, business cycles and short-run macroeconomics, the essentials of the Keynesian system, and market failures versus perfect markets, etc.

M0800 Business Ethics (2/0): This course introduces the ethical relationships between business and society, and helps students understand the multi-ethical obligations that businesses have to stakeholders, employees, stockholders, competitors, the wider community, and the environment.

M0142 Marketing Management (3/0): This is an analytical, managerial-oriented course emphasizing decision-making in the functional area of marketing. Course content includes analyzing marketing opportunities, researching and selecting target markets, developing marketing strategies, planning marketing programs and organizing, implementing and managing marketing initiatives.

B0124 Econometrics (3/0): This course is designed to familiarize students with the importance of econometrics and to train them in using basic econometric tools.

B0071 Investments (3/0): Covering mainly investment in marketable securities, this course focuses on the investment environment and process. It includes the types of existing marketable securities and where and how they are bought and sold. It is also concerned with how an investor should proceed in making decisions about what marketable securities to invest in and when the investments should be made.

B0670 Investment Banking (2/0): This course is designed to familiarize students with why investment banking is necessary, and to train them in using basic analysis tools.

B1004 Fixed Income Securities (2/0): The objective of this course is to provide coverage of the products, analytical techniques for valuing bonds and quantifying their exposure to changes in interest rates, and portfolio strategies for satisfying a client’s needs.

B0718 Futures and Options (2/0): The main purpose of this course is introduced the basic concept of the derivatives markets and the financial instruments used in this market. These instruments include the forwards, Futures, swaps and options. How to use these tools for arbitrage, speculative, and hedge is also an important object of this course. This course provides a solid basis for student to study financial engineering and new financial products.

B0696 Financial Institution Management (0/3): This course introduces the following three topics: (1) The connotation of the financial industry; (2) to measure the risk; (3) risk management of the financial industry.

B0206 International Financial Management (0/3): This course provides an introduction to financial management and international aspects of financial management with special emphasis on risk hedging.

B0173 Commercial Law (0/2): This course aims to acquaint students with the concepts of laws dealing with related industry and business. Emphasis will be placed on Company Law and the law of bills and notes.

B0154 Financial Statement Analysis (3/0): This course introduces how to examine the business performance in the past, how to examine the current state of enterprise performance and how to forecast the future of business through the evaluation of financial statements including balance sheet, income statement, statement of changes in owner’s equity and statement of cash flows.

B0109 Insurance (0/3): The purpose of this course is to provide basic knowledge of insurance. The content includes principle of insurance, risk evaluation, life insurance and property-liability insurance, etc. The students would have the ability to arrange their insurance policies after this course.

B0688 The Statistical Analysis of Financial Markets (3/0): This course focus on the analytical tool of financial and economic data. Students will learn how to collect data from database and how to analyze these data for practice usage.
B0015 Corporate Finance (0/3): Introduce the basic concepts of corporate finance, analysis and evaluate of firm value, capital budgeting, capital structure, financial planning, investment banking and listing, risk management, corporate finance and behavioral finance and corporate governance and other important issues. In addition to traditional financial decision-making, I also teaching behavioral finance, corporate finance LGD, business valuation and other important issues related to corporate governance.

B1366 Wealth Management (3/0): The course provides related knowledge and information about security investment and financial planning. The contents include essentials of financial planning, the preparation and analysis of family financial statements, cash flows management, time value of money, housing planning, child raising and education planning, retirement planning, investment planning, tax planning, and multi financial planning.

B0990 Applied Econometrics for Finance (3/0): This course focuses on the synthesis of financial (economic) theories and empirical applications. We first distinguish alternative data patterns (cross section, time-series and panel data). Then, we introduce the linear regression (simple or multiple) and show how to estimate parameters of interest as well as test relevant hypothesis. The meaning and application of dummy variable is also discussed. Finally, we further demonstrate how to deal with the problems of heteroscedasticity.

B1653 Introduction to Financial Professional Certificate (1/0): This course will introduce the professional certificate examination that is required by financial industries and how to prepare to pass the test.

B0876 Industrial Analysis (0/3): The purpose of this course is enable the students to make appropriate investment decision. Lectures will cover theories and analytical approaches of industrial development and investment. The students are required to write a report on investment portfolio.

B0672 International Financial Market (0/2): This course is designed to analyze key international financial markets that facilitate trade and investment activity on a global scale. We discuss the economic determinants of price, price changes, and price relationships in the major international financial markets.

B0339 Bank Financial Management (0/2): This course will introduce you several topics regarding a bank’s financial management. First, we cover four primary concerns of commercial banks, including liquidity, assets, liabilities, and capital adequacy management. Second, we review the detail procedures of credit checking. We also talk about the issue of corporate governance and financial supervision. Finally, we will focus on merger and acquisitions (M&A) in bank industry. I hope that this course is able to enrich students' knowledge in commercial banks.

B0508 Financial Engineering (0/3): This course introduces various tools in financial engineering and trains students in how to apply them in risk management and in financial problem solving.

B0939 Financial Risk Management (3/0): This course provides an overview of the concepts and the mechanics of risk management, including detailed discussions of the Basel Accords.

B1548 Topics in International Economics and Policy (3/0): This course is designed for those not majoring in economics; however, students should have completed the prerequisites of Principles of Economics. We will discuss political and economic aspects of trade barriers, commercial policy and connections between trade and development, FTAs, WTO and income distribution; understand the debate between economists and people from other fields on free trade; study the causes and consequences of international financial crises.

B1651 International Professional Financial Certificate (3/0): This course is designed to help students to prepare the test of CFA and FRM.

B1652 Guide to Professional Financial Reading (1/0): This course is designed to guide the student in reading professional financial reading such as Wall Street Journal and Financial Analyst’s Journal.

B0229 Practice of Foreign Exchange (0/3): This course is designed to students with why foreign exchange (trade) is necessary, and to train them in using basic analysis tools.
B0434 Securities Investment Practices (0/3): Let the students can understand the efficiency market, fundamental analysis, Industries analysis and Technique analysis, improve his investment analysis and the chance of profit.

B1093 Financial Innovation (0/3): This course provides a basic overview of mathematical statistics and mathematical finance. It is designed as a required preparatory course for financial engineering.

B1443 Financial Analysis and Investment (0/3): This course is designed to prepare you to interpret and analyze financial statements effectively. This course explores in greater depth financial reporting topics introduced in the core course in financial accounting and also examines additional topics not covered in that course. The viewpoint is that of the user of financial statements. This course is designed primarily for students who expect to be intensive users of financial statements as part of their professional responsibilities.

M0405 Management (0/3): This course consists of two sections: one covers general management theories, and the other covers modern management trends. It covers many topics, including planning, organization, and leadership.

M0517 Statistics (2/2): This course emphasizes applications and fundamental concepts of statistics as well as providing a practical orientation that teaches students how to identify the correct method, calculate the statistics, and properly interpret the results in the context of the question or decision at hand. Students will learn not only the algorithms and techniques used to solve related problems, but also the real-world applications that adopt these methods. Students are encouraged to utilize computers in every stage of this course.

M0518 Accounting (2/2): The essential purposes of accounting are to report a company’s financial conditions, operating results, and changes of financial status. This course aims to instruct students in the logic behind accounting, accounting processes, the preparation of financial statements, and key concepts of financial analysis.

S0325 Calculus (2/2): This course covers limits, differentiation and integration of functions of one variable, infinite series, functions of several variables, partial derivatives, and multiple integrals.
MASTER’S PROGRAM IN BUSINESS AND MANAGEMENT  
(ENGLISH TAUGHT PROGRAM)

Degrees Offered: M.B.A.

Chairman: Ruey-chyn Tsaur (曹銳勤)

The Program
The Master's Program in Business and Management is conducted solely in English as part of the university’s internationalization education initiative. Our objective is to provide a solid foundation and beneficial guidance to Taiwanese and overseas students alike in the integrated fields of business and management through challenging topics and practical courses that are in line with the current trends and practices.

Faculty

Professors
Ruey-chyn Tsaur (曹銳勤); Pei-chi Lii (李培齊); Shu-hsien Liao (廖述賢); Hsu-shih Shih (時序時); Wei-Lun Chang (張瑋倫); Cheng-hao Pao (包正豪)

Associate Professors
Hsu-hua Lee (李旭華); Hsing-yin Wen (文馨瑩); Min-fen Tu (涂敏芬); Sue-chin Yang (楊斯琴); I-fei Chen (陳怡妃)

Assistant Professors
Cheung-sum Lu (路祥琛); Chia-Chi Wu (吳家齊)

Degree Requirements
The Master’s Program in Business and Management (English Taught Program) graduation requirements are completion of a total of 39 credits including 10 required credits and a minimum of 29 selective credits.

Course Descriptions

Master’s Program

Core subjects:
M0144 Seminar in Marketing Management (3/0): An understanding of how value is created through the integrated production and distribution of goods, services, and information, and an ability to analysis (compare and contrast, show causality, examine assumptions of) factors both internal and external of an organization. Students would be able to comprehend the concept of customer-oriented marketing strategies; the significance of buyers and markets; the selection of target markets; the art and science of product, place, price and promotional decision. Overall, students are expected to be able to write up a Strategic Marketing Plan.

M0800 Business Ethics (1/0): The current course introduces the ethical relationships between the business and the society, and help students understand the mutli-ethical obligations of businesses toward stakeholders, inclusive of employees, stockholders, competitors, community, and environment.

T8000 Thesis (0): This course is required for students who are in the process of writing a thesis. (Chinese or English)

Selective subjects:
M0747 Strategic Management (3/0): This course introduces the basic concept of strategy formulation in the competitive environment around the world. All discussions will be accompanied by case studies.
M1512 Service Management (3/0): Students will obtain a comprehensive picture of service management and how to improve service quality.

M0477 Quality Management (3/0): This course will cover the theory and practice of Quality Management including the concept, perception, system, and tools of Quality Management.

M0003 Human Resource Management (3/0): This course emphasizes basic human resource functions of both personnel specialists and operating managers. Critical issues include selection, training, compensation, and performance appraisal and discipline.

M0853 Electronic Commerce (3/0): This course introduces the concept of electronic commerce, including business model, strategy, marketing, branding, CRM, and mobile commerce issues. The practice cases also need to read by students to deeply understand the effects of e-commerce on business consumers.
TKU-QUT DUAL MASTER DEGREE PROGRAM IN FINANCE
(ENGLISH TAUGHT PROGRAM)

Degrees Offered:
M.A. in Finance from TKU and M.B. in Applied Finance from QUT

Chairman: Yen-Ling Lin (林彥伶)

The Program
1. About this Program
This dual Master degree program (English-taught) is collaboratively designed and taught by College of Business and Management, TKU, and the School of Economics and Finance, QUT Business School. The program offers qualified students an M.A. in Finance from TKU and an M.B. in Applied Finance from QUT simultaneously in two years.

2. Business Programs at QUT
- QUT Business School is the first Australian business school to earn triple international accreditation (EQUIS, AACSB, AMBA).
- 2015 Times Higher Education Top 100 under 50 ranked 33. 2015 QS Top 50 under 50 ranked 38.
- Graduates are working in some of the best global companies worldwide including Google, BMW, Apple, Sony, Yum and Gucci.

3. Fees
Students will pay the relevant fees to each school over the time that they are enrolled with that school. The annual tuition fees are about $120,000 NTD at TKU, and around $30,400 AUD at QUT in 2018.

Faculty
Faculty members consist of outstanding and experienced teachers from both College of Business and Management, TKU, and the School of Economics and Finance, QUT Business School to provide the best quality of teaching.

Master’s Program
(The first year study of TKU)

B0130 Intermediate Microeconomics (2/0): This unit is designed to develop students' economic way of thinking. The concepts and frameworks developed in the unit will form the basis for understanding the behavior of consumers, firms and governments, critically assess the performance of markets and evaluate the impact of government policies on efficiency, distribution and welfare of the economy.

B0154 Financial Statements Analysis (2/0): This course introduces some theories and tools about financial statements analysis. It provides an overview of financial statement and presents some approaches to overcome some practical problems.

B0759 Financial Institutions Management (2/0): This course includes the following topics: introduction to financial service industry with further discussion on the performance and efficiency of the financial industry, and analysis on various risks of financial intermediations, and different risk management methods.

B1078 Derivatives (2/0): Derivatives markets have become increasingly important in the world of finance and investments. It is now essential for all finance professionals to understand how these markets work, how they can be used, and what determines prices in them. This course addresses these issues.

B1687 Fixed Income Securities and Financial Innovation (2/0): This course discusses the analytical framework necessary to understand the pricing of bonds and their characteristics. Students are expected to have abilities to value bonds and quantify their exposure to changes in interest rates, and portfolio strategies.

M0272 Seminar in Financial Management (3/0): This interactive seminar will show how finance works in today’s fast-moving business environment. The key elements of profitability, liquidity and financial structure are comprehensively explored.
B0262 Monetary Theory & Policy (0/2): This course schedules both theoretical and empirical money economics analyses and motivates students to develop their personal ideas and thoughts for the real money market. Empirical analysis methods and tools will be enhanced in the class. All students will have to develop the ability to analyze the money market after the class.

B0373 Intermediate Macroeconomics (0/2): This is a graduate level macroeconomic course that considers the basic elements of income determination, consumption, investment, trade, unemployment, inflation, and growth.

B0697 Corporate Financial Policy (0/2): This is an advanced elective that provides an overview of corporate financing. It emphasizes the different types of securities issued by the firm, venture capital, choice of capital structure, cost of financial distress, dividend policy, share repurchases, short-term and long-term financial planning, corporate control, and mergers and acquisitions.

B1039 Corporate Governance (0/2): This course is aimed to give you an overview of empirical contribution in corporate governance and prepare you to conduct empirical research on finance. The topics cover the mechanism of internal and external corporate governance, and the applications of corporate governance. Students are required to read (or present) one paper and submit a summary report every week. Students' final grades will be determined by his/her performance in summary reports and final presentations.

T0081 Research Methodology (0/3): This course studies the nature, scope, and significance of business research and research methodologies. Additionally, the course studies primary research methods with applications to specific problems, using qualitative and quantitative methods for individual investigation and reporting on current problems within a student's area of interest.
MASTER’S PROGRAM IN BIG DATA ANALYTICS AND BUSINESS INTELLIGENCE

Degrees Offered: M.B.A.

Chairman: Hsiu-mei Lee (李秀美)

The Program
The Master’s Program in Big Data Analysis and Business Intelligence offers broad graduate courses to meet the diverse needs of big data analysis in different areas including industrial engineering, finance, public opinions, biomedical science, production management, transportation management, and social survey.

Faculty
Faculty members consist of outstanding and experienced teachers from the Department of Statistics, Department of Information Management, Department of Transportation Management, and Department of Business Administration to provide the best quality of teaching and research in the area of big data analysis.

Degree Requirements
Requirements for a degree of M.B.A. in Big Data Analysis:
A master’s degree requires a minimum of 37 graduate credits including 10 credits of required courses. At least 30 credits must be completed within the program. Students are required to complete a thesis under the supervision of a faculty member of the program, submit a thesis, and pass an oral examination.

Course Descriptions

Master’s Program

E3611 Text Mining (0/3): The course teaches text mining theories and techniques, including web crawling, text data pre-processing, corpus, document-term matrix, topic modeling, and data mining techniques used in text mining.

M0115 Multivariate Analysis (0/3): This course introduces fundamental concepts of analyzing multivariate data, including basic multivariate statistical inferences, principal components analysis, factor analysis, canonical correlation analysis, classification and cluster analysis etc. In addition to basic ideas and theoretical results, practical applications of statistical software are also illustrated by examples.

M0144 Seminar in Marketing Management (0/3): This course will provide an overview of the broad field of marketing management. We will strive to develop both a detailed theoretical understanding of marketing management and an appreciation of methodological perspectives that are foundational to this field. Students will present a case report in class. Students will also be asked to learn a statistic tool (e.g., SPSS) to analyze the perceptions of consumers from an empirical survey. In this manner, we will help you to realize a detailed combination of the theoretical and practical perspectives in marketing management research.


M0272 Seminar in Financial Management (3/0): Introduction of financial management, capital asset, market pricing, stock valuation, future option, bond wacc, dividend policy, financial analysis, M&A.

M0644 Database (0/3): This course discusses the fundamental and advanced database related concepts and technologies. Topics include: database model, data storage, data retrieval, query optimization, transaction management, database management, data recovery, and distributed databases. Recent developments of NOSQL databases will also be introduced.

M0804 Statistical Application Software (3/0): Software tools useful for statistical computing will be
introduced in this course. These will include R and SAS. The goal is to provide students with basic programming skills on data manipulations, management, graphical presentations, and summaries. More advanced topics will include how to write functions and macros. In addition to providing programming experience, the coverage will also emphasize some popular techniques and methods for statistical concepts and data analysis. Approximately equal time will be spent using SAS and R.

M2343 Advanced R Programming (3/0): This course applies advanced techniques to the programming language R and introduces some programming skills with the language regarding statistics in data manipulation, calculation, and graphical display.

M2344 Advanced Applied Statistics (3/0): This course will introduce advanced concepts and methods of statistics, including linear regression, profile monitoring, ANOVA, logistic regression and cluster analysis.

M2345 JAVA Programming (3/0): This course will first provide basic programming concepts and practices about programming, including loops, methods, arrays, and recursion. Object oriented programming concepts and practices, will then be covered, including abstraction, inheritance, polymorphism, exception handling, and GUI.

M2346 Special Topics on Big Data Analytics from Social Media (0/3): This course provides students to discuss and work alone on special topics related to big data analytics from social media. Topics include fundamentals of social media mining, community discovery and evolution, applications in the field of interesting business models.

M2405 Quantitative Finance with R (3/0): The course emphasis on finance will include portfolios and capital asset pricing model, and discuss related statistics. Nearly all of the examples use data sets that are available in R, so students can reproduce the results. The prerequisites for this course are knowledge of calculus, probability and statistics. Also, students should have some knowledge of computer programming. We will not teach R programming but each lecture provides an “R lab” with data analysis and simulations. Students can learn R from these labs and by using R’s help or the manual.

M2406 Special Topics on Quantitative Finance (3/0): This course focuses on the portfolio optimization from the perspective of computational finance and financial engineering. It will introduce the statistical methods in financial applications along with R.

M2407 Parallel Computing (0/3): To learn various theories and programming techniques of parallel computing, including SIMD, MIND, MAP/Reduce, etc. R and C++ are main programming tools in this course.

T0081 Research Methodology (0/3): To introduce research methodology and applied techniques for a master degree of big data.
DOCTORAL PROGRAM IN FINANCE INDUSTRY AND BUSINESS MANAGEMENT

Degrees Offered: Ph.D.

Chairman: Yu-lung Chen (陳玉瓏)

The Program
   Doctoral Program of Finance Industry and Business Management was established in 2017. The program offers a curriculum with interdisciplinary learning, solid theoretical and practical training, to prepare students to become financial industry management professional personnel. The student has to complete the first year study in master program, then transfer to this doctoral program in the second year; students must serve an internship in enterprise during the following fourth and fifth year, and complete a dissertation.

Faculty
   Professors
   Jong-rong Chio (邱忠榮); William T. Lin (林蒼祥); Chien-liang Chiu (邱建良);
   Ho-chuan Huang (黃河泉); Chien-chung Nieh (聶建中); Ming-chih Lee (李命志);
   Wo-chiang Lee (李沃牆); Kuang-ping Ku (顧廣平)

   Associate Professors
   Yu-lung Chen (陳玉瓏); Ching-chih Hsu (徐靖志); Chang-wen Duan (段昌文);
   Wan-hsiu Cheng (鄭婉秀); Yun-yung Lin (林允永); Chien-chih Lin (林建志);
   Sue-chin Yang (楊思琴); Hung-kun Chen (陳鴻崑)

   Assistant Professors
   Cheung-sum Lu (路祥琛); Ren-he Wang (王仁和); I-Ting Lu (呂伊婷)

Degree Requirements
   Doctoral Program in Finance Industry and Business Management offers one program at the graduate level (Ph.D.). The degree requirements for the program are as follows:
   1. Complete the first year study in master program, and then transfer to this doctoral program in the second year.
   2. Completion of 36 credits of courses, including 21 credits of required courses, 12 credits of internship in an enterprise during the following second and fifth year, and 15 credits of elective courses offered by the program.
   3. Publication requirements before graduation: Students are advised to refer to the department for the requirements. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions
   B0411 Risk Management (3/0): This course is designed to overview cutting-edge quantitative techniques for quantitative risk management or financial econometrics, e.g. multivariate value-at-risk estimation, credit risk modelling, and stochastic variance modelling.

   B0711 Seminar on Macroeconomic (0/3): Topics of this course include: The Real Exchange Rate and the Terms of Trade, Uncertainty and the International Financial Markets, Imperfections in International Capital Markets, Global Linkages and Economic Growth, Nominal Price Rigidities Empirical Facts and Basic Open-Economy Models, etc.

   B0712 Advanced Econometrics (0/3): This course is designed to help students understand the Optimization and Non-linear Regression Models, Non-parametric Estimations, Models for Panel Data, Models with Discrete Dependent Variables, Limited Dependent Variable and Duration Models, State Space Models, and the Kalman Filter Method.
**B0714 Seminar on Investment Theory (3/0):** This course is designed to expose students to empirical investments in different topics. In most of the meetings, the instructor will lead a discussion of the materials, while the papers will be assigned to specific students who are responsible for presenting and leading discussions of the paper.

**M1620 Seminar on Corporate Governance (3/0):** This course is designed to comprehend the existing development condition and future tendency of domestic and foreign corporate governance. To enhance the research capacity of Ph.D. students, in most of the meetings, the instructor will lead a discussion of relevant issues in corporate governance in selected journals.
MASTER'S PROGRAM IN DIGITAL BUSINESS AND ECONOMICS

Degrees Offered: M.B.A.

Chairman: Hsiao-wen Hung (洪小文)

The Program

The program aims to cultivate students’ abilities of applying information technology to economic and financial environments as well as industrial analysis so that students can have a better understanding of important trends shaping the modern economy.

Faculty

Faculty members consist of outstanding and experienced teachers from the Department of Economics, Department of Information Management and Department of Industrial Economics to provide students courses including data mining, web programming and its applications, economics, and finance.

Degree Requirements

Students must take at least 32 credits (12 required credits and 20 credits from the program’s proposed elective courses) and complete a master thesis.

Course Descriptions

Master’s Program


M2263 Financial Technology, Fintech (3/0): There are six issues related to Fintech, including information security, block chain, insurance, security, bank, and regulatory sandbox. We will take three weeks on each issue to complete this whole course.

M2371 Modern Banking and Digital Finance (3/0): Asia is the center of future world economic development. The domestic financial market is limited. To assist domestic financial institutions in the expansion into the rest of Asia, our government is committed to create a conducive environment for further financial consolidation. Digital financial technology and innovation capabilities will be the two main key drivers for the future development of the financial industry. Financial institutions need to use digital technology to enhance their competitiveness and proliferation of the mobile technology generation.

M2372 The Network Security and E-Business (2/0): This course introduces the essential issues of E-Commerce in Information security. Three main parts includes the E-Commerce security technology, Information Security Management, and Personal Data Protection Law. E-Commerce security technology includes the traditional symmetric system, modern public key system, hashing function, and authentication protocols, etc. Information Security Management includes ISMS, BS 7799 and ISO 27000 series.

T1319 International Economics and Finance (3/0): Analyses and discussions of the topics of international economics and financial development.
The Office for AACSB Accreditation

Executive Director: Ku-Jun Lin (林谷峻)

Brief History

The office was established in 2010 under the supervision of the Dean of School of Business and the Dean of School of Management.

Through the accreditation process, our strategic management standards are carefully discussed and designed. After aggregating the resources of the university, then we make sure those resources are sufficient and will be allocated to the university stakeholders in an effective and efficient way. Finally, we promise to provide quality education to our students and will verify the results of student learning, and take the results as bases for continuous improvement.

Currently we are in the pre-accreditation process and hope we will touch down in the near future.

Motto and Goals

The ultimate goal of this office is to promote both schools with international accreditations, such as AACSB (The Association to Advance Collegiate School of Business).

Future Development

The accreditation standards can be classified as:

1. Purpose and Strategic Management
2. Participants
3. Assurance of Learning

The three aspects are including 15 criteria of accreditation, each criterion is connected with purposes and goals of the school. The accredited schools will need to maintain the accreditation criteria and submit an annual report. Every five years those schools should take the review again with revised documents. During the accreditation process, it is critical to set up the vision of the school and explain the rational between resources and vision.

In the future, we plan to develop and align the accreditation plan and provide high quality education to our students through the accreditation process.
The Office of Executive Master Business Administration (EMBA) Programs

Executive Director: Ku-Jun Lin（林谷峻）

Brief History:

The Tamkang University EMBA office was established in 2007, as part of the College of Business and Management. The Office is located at TKU’s Taipei Campus, which is situated close to one of Taipei’s major commercial districts and accessible by all major forms of public transport. Tamkang University’s EMBA offers the ideal learning environment according to previously-conducted evaluations of higher education. It emphasizes a practical approach and trains students to become elites in a variety of industries.

Programs:

Currently, the program offered by TKU is the largest EMBA program in Taiwan. Prospective students may choose from nine separate disciplines: International Marketing, International Business, Banking and Finance, Risk Management and Insurance, Business Administration, Accounting, Information Management, Public Administration (MPP), Management Sciences.

Goals:

The objective of this office is to provide EMBA students with lifelong practical business and management skills.

Merits

The TKU EMBA program:
1. Trains around 250 students per year in a variety of professional fields.
2. Has produced over 3,000 EMBA alumni.
3. Offers nine separate disciplines in Business and Management. More than 200 faculty members are ready to take students to explore knowledge in business and management.
4. Provides cross-discipline training. Besides core courses, students can select elective courses from the above nine disciplines. They can use different management skills that are learned from various EMBA disciplines and achieve proficiency in a number of business-related fields.
5. Allows students to take part in a diverse range of activities, such as speeches by managers of famous enterprises, academic seminars, softball tournaments, basketball tournaments and a year-end celebration party. These activities enhance interaction among students, faculty and enterprises.
6. Facilitates cross-strait exchange between students and scholars and short-term courses with sister universities, such as Zhejiang University and Xiamen University, which helps to enlarge students’ overseas network.
7. Gives graduates an edge in the market. TKU graduates have been voted “enterprises favorite graduates” for 19 consecutive years in an annual survey conducted by Cheers Magazine.
CROSS-STRAIT FINANCIAL RESEARCH CENTER

Director: William T. Lin (林蒼祥)

The Cross-Strait Financial Research Center was established in 2012 to enhance research in the area of Cross-Strait finance. The center is affiliated with the College of Business & Management and operates on a self-funded basis.

Functions of the center include:
1. Promoting research related to Cross-Strait financial issues;
2. Conducting research projects commissioned by external organizations;
3. Other related affairs.

(Contacts): email yungshuncn@hotmail.com ;
(Official website): http://cross-strait.tku.edu.tw/home.html

STATISTICAL SURVEY RESEARCH CENTER

Director: Wen, Bor-shyh (温博仕)

The Statistical Survey Research Center (SSRC) was established in May 2004 as an affiliate of the former College of Management. Subsequently, in August 2005, it became an affiliate body of the Office of Research and Development. SSRC has been under The College of Business and Management since August 2015. One of the Center’s main objectives is to assist in producing scholars and professionals capable of conducting high quality research in the area of management. The center encourages the application of theoretical knowledge to applied studies.

National Cheng Kung University and National Chengchi University have established research institutes in related fields to explore issues relevant to data analysis and have used this type of analysis for educational purposes. The main objective of establishing the Center is to provide students in statistics and related fields with an additional platform for learning and research. We expect our students to be able to use what they have learned to broaden their knowledge of statistics. We also hope to advance the quality of education, to nurture scholars’ and statisticians’ theoretical and practical expertise, to meet the future needs of society, and to support data analysis research both within and outside TKU.

CENTER FOR INFORMATION TECHNOLOGY USAGE BEHAVIOR RESEARCH

Director: Chia-ping Yu (游佳萍)

Information systems are social technology application systems that integrate human beings and computer equipment. With the rapid development of information and network communication technology, most people are equipped with mobile devices that provide ubiquitous information applications. This trend has a significant impact on the social, organizational, managerial, and behavioral aspects of information technology usage. This Center aims to provide a platform for enhancing the public’s understanding of information technology usage and behavior, and for overcoming the usage barriers inherent in information technology applications.
COLLEGE OF
FOREIGN LANGUAGES AND
LITERATURES
COLLEGE OF FOREIGN LANGUAGES AND LITERATURES

Dean: Wan-bau Wu (吳萬寶)

Brief History
The College of Foreign Languages and Literatures had a long history of development before being formally established as a college in 1992. It began as an English program—the only program offered by Tamkang University at its inception in 1950. The English program became the Department of Western Languages and Literatures in 1958 and expanded over seventeen years to eventually comprise four sections: English, Spanish, French, and German. The “sections” were later upgraded to departments in 1975. In 1985, the Department of Oriental Languages was renamed the Japanese Department, and in 1992 became the college’s fifth department. A year later, the Russian Department was established. The college has since retained its current structure of six departments.

Motto and Goals
The motto of the college is “innovative thinking in an age of digital learning.” It encapsulates the spirit of the college; that of creating and innovating in order to prosper in a rapidly changing era of information technology.

In keeping with the TKU Triple Objectives of Education—globalization, information-oriented education, and future-oriented education—the college provides students with a dynamic, multi-cultural environment conducive to the learning of foreign languages and literatures. Such an environment is created through the holding of numerous academic and multicultural activities, the presence of international faculty and students within the college, various lectures by visiting scholars from abroad, regular international conferences, and an increasing degree of digitalization incorporated into our curriculum and teaching methods.

- The college offers Junior Year Abroad programs, which enable students to study and experience life at partner universities in the U.S., Canada, Spain, France, Germany, Japan, and Russia and gain further proficiency in their language of choice.
- The college also works with the College of International Studies to offer interdisciplinary courses focusing on area studies, international politics, international relations, and economics.

The ultimate objective of the college is to prepare our students both professionally and personally for challenges that come with an increasingly globalized and digitalized age. We envision a bright future for our students and help them to create such futures with knowledge and skills acquired in our programs.

Future Development
A three-fold scenario for our future development is as follows:

1. Curriculum Reform
This involves enhanced cooperation with other TKU colleges to establish interdisciplinary programs instructed in Chinese as well as in English. Second, a team composed of faculty from each of the six departments has been engaged in developing and promoting an e-learning website, MULTI, for the six foreign languages being taught. Third, another significant reform to our curriculum, the Multi-Language Translation and Interpretation Program, began in the 2009-2010 academic year. It draws upon college faculty and external professionals to offer a high-quality 20-credit point program. The goal is to train students in the skills of translation and interpretation to meet the demand of a viable market for talents in this field.

2. Enhancement Our Research Capabilities
The College has long enjoyed a fine reputation for effective foreign language instruction. It is one of the few foreign language colleges in Taiwan to offer such a comprehensive range of foreign language programs. Currently, the College has three graduate programs: English, French, and Japanese (the English Department offers a dual-focus program in English and TESOL). The college publishes three scholarly journals: the Tamkang Review (since 1970), Tamkang Studies of Foreign Languages and Literatures (since 1998), and Tamkang Japanese Journal (since 1991).

3. Further Expansion of our Junior Year Abroad Program
The college’s Junior Year Abroad Program was launched in 1993, with initial efforts focused on sending students to study for one semester at Reitaku University, Japan. In the following years, Spanish, German, French, English, and finally Russian majors began to attend TKU partner universities for a year of student exchange. The total number of students to participate in the program since 1994 from the college alone has already exceeded 2,500. Our partner universities include Brandon University (Canada), Indiana University of Pennsylvania (U.S.A.), Winona State University (U.S.A.), Universidad de Navarra (Spain), Université de Franche-Comté (France), Université Nice-Sophia Antipolis (France), Université Jean Moulin Lyon 3 (France), University of Bonn and University of Cologne (both Germany), Reitaku University (Japan), Josai University (Japan), Josai International University (Japan), Tachibana Women’s University (Japan), and Saint-Petersburg State University (Russia).

Common Elective Courses
To encourage students to take subjects outside of their majors, we offer elective courses to non-foreign-language majors. The following is a sampling of course titles:
- Simultaneous Interpretation (English-Chinese)
- World Literature in Chinese Translation
- Sociolinguistics
- Contemporary French Culture and Society
- Introduction to Japanese Politics and Economy
- Intercultural Issues
- Introduction to Spanish-Portuguese Classical Music
- Socio-Political Issues of Contemporary America
- Japanese Literary Classics in Chinese Translation
- Digital Teaching Platform: Its Role in Innovating Foreign Language Teaching
- Introduction to Environmental Literature

These course offerings vary from year to year to maintain diversity and encourage faculty participation in this sector of our curriculum.

Course Descriptions

A0766 German (I) (2/2): This course helps students understand the habits and manners of communication in German and practice basic sentence patterns in the hope that students will master those habits. This course is restricted to non-German majors.

A0767 German (II) (2/2): This course is for students who have taken “German I.” The development of intermediate German grammar and practices are focused in this course. In addition, the students are encouraged to communicate in German and try to read some German texts in class.

A0838 Practical English (2/2): The purpose of this course is to improve students’ practical English abilities by providing them readings, language practice & activities based on subject-specific readings in such areas as news, international business transaction, and work-place situations.

A1328 Spanish (II) (2/2): Set at a basic level, this companion course to Spanish (I) is open to everyone who wishes to enhance their skills in the third most spoken language worldwide. Also included in the course is a cultural orientation, with an innovative introduction to visual tools such as concept maps and mind mapping.

A1329 French (II) (2/2): This course deals with intermediate grammar and vocabulary of the French language and helps students improve their reading skills through the practice of reading in French.

A1563 Japanese (III) (2/2): This course includes reading and writing in Japanese at the intermediate level. In reading articles, students can develop more vocabulary and enhance grammar comprehension. In writing short essays, students can apply what they have learned to their own works.

F0077 Theory and Practice of International Relations (2/0): This course examines major theories in international politics, from grand theories to functional theories, introduces the basics of each theory in
international politics with a focus on interdisciplinary utilities and also explains the application of various theories based on the instructor’s own experience in diplomatic practice.

**F0079 Contemporary French Society and Art (2/0):** This course introduces the French way of life, behavior, languages, thought, the influence of immigration, and the concept of regions as entities with their own unique characters given the blurring of national barriers thanks to the formation of the European Union.

**F0148 The Historical Background of Current Events (0/2):** This course aims to provide overviews of major developments in the world since the end of the Cold War from an inter-disciplinary perspective. It also traces some of these developments back to incidents that occurred in the Islamic world decades prior to 1989.

**F0157 English Conversation for Studying Abroad (2/2):** Though hard working and highly accomplished academically, Taiwanese college students have a hard time speaking English. Oral communication in a non-native language is a complex task which requires the full engagement of one’s cognitive machinery as well as social and communicative skills. Students must be taught not only to talk, but also to speak with confidence in order to be well acknowledged when going abroad. This course aims to achieve this goal through intensive training.

**F0176 Introduction to Politics and Economy of Japan (2/0):** This course incorporates documentary films to acquaint students with the basics of Japanese politics and economy.

**F0210 Interaction between the Internet & Language Training (2/0):** This course teaches students how to utilize search engines to find useful information in websites.

**F0334 Japanese Literary Works in Chinese Translation (0/2):** The aim of this course is to give students an understanding of the deep structure of Japanese culture by reading famous Japanese literary works from ancient periods (for example, the *Tale of Genji*) to modern days (such as works by Murakami Haruki).

**F0543 Development of European Civilization (3/0):** This course offers a chronological survey of Western Civilization. It begins with an introduction to the three main sources of Western civilization, namely the ancient Greek, Roman and Hebrew cultures. Then, the following topics will be presented in succession: the medieval age, the renaissance, religious reform, the enlightenment, French impressionist art, post-modern thoughts and architecture, and the age of globalization.

**F0643 A Comparative Study of Classics (0/2):** In this course students will read and compare literary works from different countries. Small groups of students will present literary texts and their authors, as well as their cultural, historical, and aesthetic contexts with PowerPoint.

**F0732 Advanced Japanese (2/2):** This is an advanced course that follows on from Japanese (I). The program is designed to enhance pronunciation in conversation and writing skills. Students will get practice in reading longer articles in order to enhance their skills in grammar and comprehension.

**F0781 Interpretation (3/3):** Though hard working and highly accomplished academically, Taiwanese college students have a hard time interpreting and translating rapidly and smoothly. Mastering translation and interpretation is a complex task which requires the full engagement of one’s cognitive capacity as well as social and communicative skills. Students must be taught not only to translate and interpret, but also to develop professional attitudes that will stand them in good stead for their future careers. This course aims at achieving this goal by using a mixture of theory and practice.

**F0782 Approaches to Translation (3/0):** This course is designed to initiate students into the field of translation by introducing them to basic guidelines and theories of translation, assigning weekly translations of articles on different topics, and sharing experiences in class discussions.

**F0784 Introduction to Practical Translation (2/0):** The purpose of this course is to help students enhance English-Chinese translation skills and knowledge through the reading of contemporary scholarly journals, current documents and major speeches and statements. Students also are required to engage in English writing and translation practice.
F0802 The Culture and Language of Vietnam I (2/0): This course is made up of three parts. In the first part, students will learn the Vietnamese alphabet, pronunciation, and spelling. The second part will cover Vietnamese vocabulary and phrases, including nouns, verbs, adjectives, adverbs, and function words. In the third part, students will use the words and phrases they have learned to make sentences, and they will learn to create different dialogues in different contexts.

F0803 The Culture and Language of Vietnam II (0/2): This course is made up of three parts. In the first part, students will learn the Vietnamese alphabet, pronunciation, and spelling. The second part will cover Vietnamese vocabulary and phrases, including nouns, verbs, adjectives, adverbs, and function words. In the third part, students will use the words and phrases they have learned to make sentences, and they will learn to create different dialogues in different contexts.

T0470 Spanish (I) (2/2): This course is set at entry level to build up learners’ interest in. It is a practice-oriented course that aims to promote the Spanish language to non-Spanish department students though the use of digital laboratory workshops.

T0479 French (I) (2/2): This course introduces the basic vocabulary, sentence patterns, and grammar structures of the French language, as well as French culture and daily life.

X0002 English Tutorial (2/2): This course is offered exclusively for those who fail to meet English proficiency standards set by the university before graduation. It is an online course gives students access to course materials anytime, anywhere. In addition to online learning, students are required to attend onsite instruction on designated days.

F0868 Recent History: Major Events and Developments since 911 (2/0): The past is what today will become tomorrow. The past can refer to yesterday, the day before yesterday, a few weeks ago, a few months ago, decades ago, or centuries ago. Modern history refers to the history that has unfolded in recent decades. Commentators consider 911 an event that changed the world. In this course we plan to look at aspects of recent history since 911. At times, we may have to go back a bit further. The course will provide overviews, comments and various attempts to make sense of recent events.

F0866 Introduction to Translation Theory (2/0): This course emphasizes translation and its relation to cultures. Translation, which is not merely the transposition of the same meanings in different languages, actually involves the transposition of thoughts expressed in one language by one social group into the appropriate expression of another group, and entails a process of cultural de-contextualization and re-contextualization. With the rapid growth of globalization, cultures nowadays are increasingly brought into greater contact with one another.

F0997 Introduction to World Literature (2/0): This course is designed to introduce students to scholars and experts in the field of world literature. It recommends a vast range of classical and popular literature and provides ways and new approaches of interpreting such literature.

F0998 Introduction to Comparative Literature (0/2): This course is an introduction to comparative literature. From its outset, comparative literature has had a largely European focus. This course argues against this stereotypical approach and instead offers a global perspective by providing world literatures in relation to other arts, literary forms, cultural and social currents. Texts are selected from different genres, such as essays, fiction and film; and students will become familiar with different critical approaches that can be used to analyze literary texts.

F1001 Italian and Culture (2/0): This course is designed to introduce students to basic Italian grammar and language learning by providing an insight into Italian culture and lifestyle.

F1002 Introduction to Regional Pol-Economic Integration in Asia-Pacific (0/3): This course will focus on political and economic affairs in the Asia-Pacific region. Students will be encouraged to learn both facts and international relations theories, which will help them better understand future developments in international affairs.

F1082 English for Teaching Chinese (2/0): The course aims to provide an overview of the current status and prospects of Chinese language programs in English and all over the world.
F1083 Spanish for Teaching Chinese (0/2): The course aims to provide an overview of the current status and prospects of Chinese language programs in Spanish and all over the world.

F1084 French for Teaching Chinese (2/0): The course aims to provide an overview of the current status and prospects of Chinese language program in France and all over the world. This basic course for teaching Chinese is to introduce the phonetics, syntax, semantics, and pragmatics of general linguistics. The scope includes the planning of Chinese language curriculum, designing Chinese language teaching materials, using multimedia technology to develop course, implementing evaluation system. To assist participants to develop their careers by providing them with professional skills in teaching Chinese all over the world.

F1085 Japanese for Teaching Chinese (0/2): The course aims to provide an overview of the current status and prospects of Chinese language programs in Japanese and all over the world.

F1090 German for Teaching Chinese (0/2): The course aims to provide an overview of the current status and prospects of Chinese language programs in German and all over the world.

F1141 Russian for Teaching Chinese (2/0): The course aims to provide an overview of the current status and prospects of Chinese language programs in Russian and all over the world.

F1143 Lectures on Multiculture (2/0): The course consists of a series of lectures on cross-cultural topics. The objective is to develop a multicultural thinking and a global perspective to our students.

F1103 Korean (I) (2/0): Basic words, phrases and sentences of Korean are introduced and analyzed in this class.

F1104 Korean (II) (0/2): words, phrases and sentences of Korean are introduced and analyzed in this class.

F1238 Approaches to Film Art (2/0): This course broadens the scope of students’ visual literacy, which is otherwise restricted to the domain of mainstream American commercial movies.

F1294 Malay Language and Culture (2/0): This course uses the "Malaysia language study " published by The University of Malaysia. The clear explanation makes it easy and interesting for learners at the beginning level to learn the Malay language; an emphasis on realistic, meaningful contexts makes this book entertaining and useful to the learners. It can provide students with their first stage of learning Malaysian culture having a foundation in the structure of the language.

Indonesian and Culture (2/0): This course will help all the beginners to learn simple Indonesian quickly through various ways with professional teaching techniques, and trains the capability of speaking in Indonesian, simultaneously leading you to discover the rich culture of Indonesia. Students will be able to learn fundamental Indonesian and daily Indonesian conversations.

Advanced Indonesian (0/2): Instead of the fundamental Indonesian, this course will focus more on grammar and sentence patterns in order to make the students be able to communicate in advanced Indonesian. By taking this course, students will be able to learn advanced Indonesian conversations.
DEPARTMENT OF ENGLISH

Degrees Offered: B.A., M.A., Ph.D.

Chairman: Chen-hsing Tsai (蔡振興)

The Department

The English Department is the oldest department in Tamkang University. It owes its origin to the Tamkang English College established in 1950. The Department offers a diverse range of programs at the undergraduate, graduate, and doctoral levels. In the 2016-2017 academic year, the Department accepted 1,055 undergraduates, 63 M.A. students, and 52 Ph.D. students. The M.A. and Ph.D. programs both consist of two academic areas of research: English and American Literature and Teaching English to Speakers of Other Languages (TESOL).

The faculty consists of 31 full-time and 71 part-time employees. To enhance the quality of instruction and research, the Department continually hires qualified teachers to lower the student-teacher ratio. Among the 39 full-time employees, 29 hold doctoral degrees specializing in literature, TESOL, linguistics, and other related fields.

Faculty

Professor Emeritus
Chun Chung Lin (林春仲); Sung Mei-hwa (宋美瑋); Hanping Chiu (邱漢平);
I-min Huang (黃逸民)

Professors
Tsai, Chen-hsing (蔡振興)

Associate Professors
I-fen Wu (吳怡芬); Pei-yun Chen (陳佩筠); Yi-wu Chen (陳宜武);
Ming-hong Tu (涂銘宏); Yung-yu Huang (黃永裕); Yi-ti Lin (林怡弟);
Shizen Ozawa (小澤自然); Sy-ying Shen (沈斯瑩); Yu-ching Tseng (曾郁景);
Jia-ling Yau (姚嘉苓); Hui-chuan Wang (王慧娟); Yea-huey Chang (張雅慧);
Iris Ralph (羅艾琳); Chin-jau Chyan (錢欽昭); Ying-hsueh Hu (胡映雪);
Yu-cheng Sieh (薛玉政); Ming-huei Lin (林銘輝); Jui-min Tsai (蔡瑞敏);
Chiou-rung Deng (鄧秋蓉)

Assistant Professors
Chia-chen Kuo (郭家珍); Yi-chun Kuo (郭怡君); Jia-ying Lee (李佳盈);
Ya-chu Yang (楊雅筑); Tzu-shan Chang (張慈珊); Hsien-tai Hu (侯信惠);
Guy M. Redmer (雷凱); Iain Kelsall Brown (包俊傑)

Lecturers
Kevin Alan Lewis (陸凱文); Li-yu Wang (王麗毓); Yu-yun Wu (吳瑜雲)

Degree Requirements

The Department of English offers two postgraduate programs for both M.A. and Ph.D. degrees: (1) English and American Literature and (2) TESOL.

1. Requirements for a degree of B.A. in English:
   Completion of 128 credits of courses, including 88 credits of required courses, 20 credits of elective English major courses, and 20 credits of any other courses.

2. Requirements for an M.A. degree:
   Completion of 28 credits of courses, including 4 credits of required courses and 24 credits of elective courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.
3. Requirements for a Ph.D. degree:
Completion of 30 credits of courses. Students are required to pass qualifying examinations within the first five years, publish at least one research paper in an academic journal or present a paper at a conference approved by the Curriculum Committee, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

**Course Descriptions**

**Undergraduate Courses**

**F0755 Freshman English (2/2):** This course is aimed mainly at improving students’ reading comprehension ability.

**A0159 Approaches to the Study of Literature (2/2):** This course helps students learn how to analyze literature in terms of such elements as plot, character, setting, symbols, and traditional and postmodern forms; to appreciate the aesthetic dimensions of poetry, drama, and fiction.

**A0318 Introduction to Western Literature (2/2):** This course provides a basic understanding of different cultures, ranging from Mesopotamian literature to Modernism in order to develop knowledge about the cultural paradigm shift in the Western world, and to develop techniques of historical as well as critical analysis for appreciating and understanding arts and literature.

**A0472 American Literature (3/3):** This course offers a survey of the chronological development and background of American literature from the colonial period to the present.

**A0988 Selections of Novel (2/2):** This course aims to help students develop techniques of reading, analyzing, and appreciating fiction through such elements as characterization, setting, plot, symbols and thoughts of fiction.

**A0484 English Translation (2/2):** This course helps students improve their reading and writing skills, which in turn helps to sharpen their translation skills. Both theory and practice of translation are discussed, while the focus is placed on comparisons of Chinese and English, both from linguistic and cultural aspects.

**A0506 English Composition I (2/2):** This course hones students’ writing ability by providing basic knowledge and techniques of English writing as well as English rhetoric. Emphasis is placed on frequent practice in writing meaningful and idiomatic sentences and paragraphs.

**A0507 English Composition II (2/2):** This course aims to train students in formal academic writing. Students will learn how to expand single-paragraph writing into a multi-paragraph essay, learn more about different forms of writing and begin to understand that writing is an ongoing process of shaping ideas, writing, editing, and rewriting.

**F0497 English Poetry Reading (2/0):** This course aims to familiarize students with major English and American poets by examining their poetic forms in terms of “sound and sense” and teach students how to apply various interpretive strategies to the reading of poetry in general.

**A0514 English Literature I (3/3):** This survey course covers the Medieval Period, the Early Modern Period (Renaissance through Milton) and the Enlightenment (late 17th century through 18th century).

**A0515 English Literature II (3/3):** This survey course covers the 19th and 20th centuries, focusing on Modernism and contemporary authors.

**F0788 Introduction to English Language Teaching (2/2):** This course surveys traditional as well as current methods of English teaching and discusses the teaching of specific language skills.

**A0529 English Conversation (2/2):** This course is designed to develop students’ ability to communicate in English with a focus on fluency and articulation and to acquaint students with useful expressions in daily conversation.
A0532 Oral Presentation in English (2/2): This course focuses on effective English speech delivery skills. Students will learn how to prepare and deliver speeches, and will be required to deliver speeches in class.

A0572 Advanced English Workshop (2/0): The purpose of this course is for students to understand the basics of effective communication and to polish English speaking skills, especially those related to public speaking.

A0685 English News Writing (2/2): As an introduction to journalism for English majors, this course includes extensive practice in newspaper writing, radio and television reporting, public relations, and advertising.

A0888 Women’s Literature (0/2): This course familiarizes students with different contemporary schools of feminist thought and issues of great concern to feminists as background knowledge for appreciating feminist literature and political debates and action for empowerment and agency.

A1053 English Composition III (2/2): This course emphasizes the writing of argumentative essays. It requires as much attention and efforts to be spent on syntactic structure as on the way of thinking itself, i.e. the proposition of a concept, the elaboration of its significance to certain claims, and the logical approach toward a conclusion.

F1081 Theatre and Performance (2/2): This course is designed to introduce students to plays by well-known dramatists in British, American, and European literature. Readings are selected at the discretion and interest of the instructor.

A1152 Introduction to Western Literary Criticism (2/2): This course serves two purposes: (1) to provide students a background on the history of Western literary criticism; (2) to cultivate the virtus of an active performance of critical theories so that students will be obliged to apply these strategies to literary texts.

A1617 English Literary Prose (2/2): This course covers selected readings in English short stories and essays on contemporary issues to reinforce students’ reading comprehension. It offers lively prose models for grammatical and structural analysis and for the appreciation of syntactical beauty and rhetorical strategies.

A6537 English Phonetics (0/2): This course focuses on the following: pronunciation practice in Standard American English; transcription exercises in IPA (International Phonetic Alphabet); contrastive analysis of other phonologies; design of phonetic tools for TESOL use.

F0101 Oral Communication (2/2): This course is designed to help students speak fluent English. Classroom activities include pair work, small group discussions, and role-plays, each of which give students opportunities to practice and, therefore, hone their English-speaking skills.

F0127 Selected Readings in Ecoliterature (2/0): This course helps students acquire a basic knowledge of nature writing as a genre, its relation to ecology and its relevance to the solution of ecological crises. It is also designed to raise students’ consciousness of ecocriticism while improving students’ skill of reading through a perusal of ecological prose, poetry and fiction.

F0252 Syntax (2/2): This course covers major issues in English syntax from the viewpoint of generative grammar founded by Noam Chomsky. The course is primarily organized around lectures and in-class discussion. Grades are based on a combination of examinations and class attendance.

F0298 Shakespeare in Films (2/2): This course considers screen adaptations of William Shakespeare’s dramas. Rather than focusing on the reading of plays, it aims to explore the issues of cultural studies such as nationalism and sexuality through film representation. Different film versions will be provided for discussion, through which to learn various approaches to Shakespeare’s plays.

※Please see the course information system for more extensive and up-to-date course information.
Master’s Program

A1810 Principles of Instructional Design (0/2): This course covers learner characteristics, task analysis, instructional objectives, designing the instructional sequencing, strategies, message, delivery methods, and using evaluation to enhance programs: conducting formative and summative evaluation.

A1812 Principles and Methodologies of TESOL (2/0): This course explores the theoretical foundation as well as practical implications of issues like first language acquisition, styles and strategies, personality and socio-cultural factors, constructive analysis, inter-language, and error analysis, communicative competence, and testing.

A1909 Language and Culture (0/2): This course helps students understand that to communicate effectively with a native English speaker requires more than just the knowledge of English grammar. It requires that a non-native speaker should be sensitive to the social and cultural aspects of language use and how these differ between the Chinese and English languages.

A2055 Literary Theory (0/2): In this course we will read a cross section of critical texts with a special focus on the concepts of identity, difference, and the other. Thus, the purpose of this course is to impart a familiarity with contemporary literary theories and criticism so that students of literature will not only arm themselves with ideas that have shaped the contemporary scene in literary studies, but also can apply them to the reading of literary as well as social texts.

A2134 English Writing I (2/0): This course is intended to prepare students to write for a variety of occasions and audiences, with emphasis on graduate level academic writing. Students will focus on matching contents, argumentations, and styles suitable for specific purposes and audiences.

A2135 English Writing II (0/2): This course is intended to prepare students to write for a variety of purposes and audiences, with an emphasis on graduate level academic writing. Students will focus on a more advanced level.

F0188 Second Language Acquisition (0/2): The goal of this course is to develop a coherent framework for understanding the significance of input in SLA and for evaluating the implications for linguistic theories, SLA, and language pedagogies.

F0452 Cognitive Linguistics (2/0): This course raises students’ awareness of the discipline known as “Cognitive Linguistics” and in what way this discipline has influenced the way semantics, syntax and vocabulary are being investigated. Due to this perspective, the whole issue of language acquisition has been put into a new light. Therefore, the aim of the course is to explore research in cognitive linguistics and first/second language learning and what this knowledge means to language teachers. Students who have taken Research Methodology in Language, Culture, and Cognition can see this course as a more in-depth exploration of the issues previously discussed.

F0462 Literature and Music (2/0): This course explores the close and complex relationship between literature and music as “sister arts.” Given the closeness of these two forms of expression, Adorno once wrote, “Music resembles language in the sense of articulated sounds which are more than just sounds. They say something, often something human.” In contrast with other media, both are auditory, temporal, and dynamic art forms. In this course, we will address the specificity, aesthetics, and interaction of the two media. We will consider the role/influence of music in literary/philosophical works and concepts (e.g., Ovid, French Symbolists, and Nietzsche). We will explore various articulations of the two in the domains of “classical” music (e.g., “program music” and opera) and “popular” music (e.g., jazz, rock, and musical). Taking concepts such Baudelaire’s “synesthesia,” Wagner’s “Music Theater,” and Deleuze’s “Becoming-music” as points of departure, we will try to grapple with the implications of the musico-literary study. One underlying objective of the course is also to develop the vocabulary and skills needed to engage in critical understanding of the two “languages” and the diversity of literary and/or musical experiences and practices in today’s world.

F0613 Introduction to Research Methods and Writing (2/0): This course introduces practical skills for conducting research and training in the use of literary and cultural theory. We will also discuss matters of style and complete related in-class exercises designed to improve student writing.
**T0085 Research Writing (2/0):** This course offers an introduction to the theory and practice of research methods and the discipline of writing a bibliography. Students are required to read various literary or TESOL works and write research papers on them.

**Ph.D. Program**

**A1793 Second Language Acquisition and Teaching (2/0):** Theories of second language acquisition and teaching in recent decades will be introduced, discussed, and critiqued.

**A2048 Literature and Language Teaching (2/0):** This course will explore and debate key theoretical and practical issues of the teaching of literature. Discussions will focus on an introduction to fundamental issues, implications of the interaction between linguistics and literature of education, and issues raised by the inclusion of literature in the curriculum.

**A2141 Introduction to Sociolinguistics (0/2):** This course provides an overview of the field of sociolinguistics, or the study of language in its social and cultural context, with a focus on issues most relevant to the teaching of English.

**F0502 Language Testing (0/2):** This is an elective course for Ph.D. TESOL students. In this course, Language Testing Theories in recent decades are reviewed and applicable theories are critiqued and examined in the Taiwanese setting with a view to evaluating testing practices at all levels of schools. The course consists of lectures, discussions, and a final paper.

**F0916 Psycholinguistics and Language Teaching (2/0):** This course will cover major psycholinguistic areas—speech perception, sentence processing, speech production, reading, and bilingualism. Related theoretical developments will also be introduced according to different topics, accompanied with the application of teaching methodology. In most of the class meetings, the instructor and students will report on certain topics and lead in-class discussions. In addition, there will be one term paper.

**D0210 Statistic Methods and Application (2/0):** This course is designed to explore important statistical methods in research. These statistical methods include the t test, \( \chi^2 \) test, correlation, and ANOVA. Instruction will include explaining related concepts, citing instances, and exercising sample problems.

**F0854 Environmental Aesthetics (2/0):** Topics covered in this course range from wilderness areas, rural landscapes and countryside, to cityscapes, neighborhoods, and market places, shopping centers, and beyond. If construed broadly enough, these topics may be at the heart of everything we think of as life and ecosystem. In this one-semester seminar, we will discuss these topics as reflected in different types of novels including Native American novels, science fiction, travel writing, the sea voyage narrative, and short stories.

**F0857 Visual Culture and Discourse on Everyday Life (2/0):** This seminar focuses on the visual culture and discourses of everyday life. Both visual culture and discourses on everyday life concern the crisis of modernity and the quotidian—the lack of experience in everyday life, the predominance of spectacle over reality, and the lack of distinction between simulation and images of reality. The purposes of the course are to study how visual cultural theories interpret and interrogate the problems of everyday life in the age of globalization and to speculate about how the discourses on the quotidian, in return, reflect on visual culture.

**F0881 Discourse Analysis (2/0):** This course is an introduction to the study of how extended language (or language beyond sentence length) used in communication achieves its meaning, purpose and unity for participants. Discourse analysis studies language beyond its grammatical meaning and demonstrates that language is always contextualized and politicized.

**F0882 Food and Ecocriticism (2/0):** This seminar will explore relationships between food and the environmental crisis, primarily addressing implications of the frequent absence of food (as a topic) in environmental discussions. We will look at effective ethics implied by and distributed through
transnational American eating habits and at how these ethics correspond with the current state of praxis within ecocritical theory.
DEPARTMENT OF SPANISH

Degrees Offered: B.A., M.A.

Chairman: Hui-ing Lin (林惠瑛)

The Department

The Department of Spanish, established in 1962, is the oldest of its kind in Taiwan. In 1992, it became a department of the College of Foreign Languages and Literatures. Its main objective is to teach Spanish and the cultures of Spanish-speaking countries, so that graduates can communicate fluently in Spanish, teach Spanish, and play important roles in the relations between Taiwan, and Spanish-speaking countries.

To achieve its objectives, the department has designed a curriculum with subjects ranging from philology to culture, and has organized various activities to help students practice Spanish and experience the culture of Spanish-speaking countries.

The most outstanding features of this department are its international orientation, its exchange programs with foreign universities, its dynamism in the organization of national and international events, and its forward-looking vision.

The Master’s program, launched in August 2006, is devoted to the training of Spanish-speaking professionals and future scholars in related fields.

Faculty

Professors Emeritus
Yea-hong Chen (陳雅鴻)

Professors
Yue-hong Lin (林禹洪); Hsiao-chuan Chen (陳小雀); Jose Miguel Blanco Pena (白士清)

Associate Professors
Mou-chuen Chang (張茂椿); Wan-i Her (何萬儀); Hui-ing Lin (林惠瑛);
Sheng-bin Lin (林盛彬); José Ramos Abreu (羅慕斯); Lih-lirng Soang (宋麗玲);
Yu-Fen Tai (戴毓芬); Ai-ling Liou (劉愛玲)

Assistant Professors
Yun-chi Chang (張芸綺); Ai-ling Liou (劉愛玲); Chen-ling Liu (劉珍綾);
Li-mei Liu (劉莉美); Fernando Dario González Grueso (孔方明); Rachid Lamarti (葉汐帆)

Degree Requirements

1. Requirements for a degree of B.A. in Spanish:
   Completion of 128 credits of courses, including 68 credits of required courses and 18 credits of elective Spanish courses.

2. Requirements for a Master’s degree in Spanish:
   Completion of 28 credits of courses, including 2 credits of required courses and 26 credits of optional courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

A0359 Spanish Conversation I (4/4): This course deals with the listening and speaking abilities involved in everyday Spanish, such as greetings, personal information, description of surroundings, etc.
A0360 Spanish Conversation II (4/4): This course practices more phrases, tenses and grammar concepts through listening and oral practice in order to improve students’ Spanish communication ability.

A0361 Spanish Conversation III (4/4): Student will learn to develop their communicative competence and amplify their understanding of Spanish culture through conversation.

A0362 Spanish Conversation IV (2/2): This is an advanced conversation course that provides further training in Spanish speaking and listening. It aims to help students express opinions on various topics fluently.

F1365 Listening Comprehension and Pronunciation in Spanish I (2/2): This course offers students training in listening by using audio tapes and basic conversation practice with laboratory equipment.

A1301 Spanish Audio Practice II (2/2): This course is a continuation of Spanish Audio Practice I, in which students practice certain sentence patterns by listening and speaking.

A1452 Spanish Composition I (2/2): This course cultivates students’ Spanish writing techniques in reading as well as rhetoric.

A1453 Spanish Composition II (2/2): This course involves learning how to write compositions with more complicated sentence structures, vocabulary, and grammar concepts in a superior level.

F0049 Elementary Spanish Grammar (4/4): This course provides general concepts of Spanish grammar, from the basic conjugation of verbs to simple sentence patterns.

F0054 Intermediate Spanish Grammar (4/4): This course is a continuation of Elementary Spanish Grammar. In addition to the review of elementary Spanish grammar, this course provides a deeper exploration of the conjugation of verbs and other tenses.

F0739 Advanced Spanish Grammar (2/2): The goals of this course include both improving students’ skill in communicating in Spanish using correct grammar, and improving students’ knowledge of the Hispanic world.

F0141 Introduction to Spanish Literature (2/0): This course is an introduction to the history of Spanish literature from Medieval Literature to the Renaissance with an emphasis on the study and analysis of major literary works.

F1357 Reading and Writing in Spanish (2/2): The content of this course matches that of Elementary Spanish Grammar, while also providing a basic introduction to the course ‘Spanish Composition I’. In this course, students have more opportunities to practice sentence-construction and thereby improve their grammar.

F1366 Hispanic Culture (2/2): The aim of this class is based on the teaching of the knowledge relative to the Spanish and Latin American Culture in order that the students learn and establish a Spanish generic and complete panorama by means of the cultural discipline.

F0724 Applied Spanish (2/2): This course helps students gain a global, integrated vision of the field of international business. It focuses on commerce-based terminology and transactions, such as business letters, inquiries, quotations, orders, invoicing, requesting payment and business etiquette.

F1033 Translation of Spanish (I) (2/2): This course is an elemental course for oral interpretation and translation. The objective is to practice basic Spanish syntax.

F1034 Translation of Spanish (II) (2/2): This is an intermediate course for translation skills with an aim to train the translation skills from Chinese into Spanish, and vice versa.

F0738 Introduction to Latin-American Literature (0/2): The goal of this course is to acquire knowledge of the culture of the Hispanic world and its masterpieces of literature.
F0740 Superior Spanish Grammar (2/2): This advanced level course is designed for students who have learned Spanish for three years. Along with a review of advanced Spanish grammar, the analysis of the style and its usages in different texts is also an important issue.

F0775 Spanish Lexicon and Reading I (2/2): Through readings of selected articles, this course aims to improve students’ vocabulary in all aspects of daily life.

F0776 Introduction to Spanish Linguistics (2/2): This course aims to help students better understand the origins of Spanish vocabulary. Through repeated practice in class, students will come to recognize the vocabulary words in their daily use and thus be inspired to continue on the magical journey of learning Spanish. In addition, this course also teaches students to apply linguistic theories to discourse analysis.

F0777 Spanish Lexicon and Reading II (2/2): This course develops students’ reading ability by focusing on selected readings with an emphasis on Spanish vocabulary, sentence structures and idioms.

F0778 Spanish for Tourism (2/2): This course provides students with knowledge about tourism and helps to expand students’ tourism-related vocabulary in Spanish.

F0779 Masterpieces of the Spanish Novel (2/0): This course aims to help students develop familiarity and fluency in the structure and topics of Spanish literature.

F0780 Masterpieces of Spanish Drama (0/2): This course offers students the chance to develop competence in the structure and topics of Spanish literature.

Master's Program

F1165 Spanish Translation in International Politics (0/2): This course is about the interpretation and translation of Spanish to Chinese and Chinese to Spanish in the field of International Politics. We will introduce first the general theory of translation and the skills for interpretation. Meanwhile the professor will guide the students to learn the special terms in the articles and documents about International Politics and keep them practicing the interpretation of different examples of the field. Hoping that with the practice, students can find out the difficulties and the solutions in the interpretation and translation of Chinese to Spanish, and vice versa.

E1136 Research Methodology (2/0): This course introduces the instruments and methods of research to students to enable them in creating and writing theses.

F1300 Fiction and Reality in Hispanic-American Culture (2/0): The aim of this subject is to know better and to appreciate the great diversity and cultural richness of that "fiction and reality" that we call "Hispanoamérica", a group of countries linked by the Spanish language, through a variety of cultural expressions: literary texts, stories, musical and artistic works, films, festivals and traditions, etc.

F1301 The Current Situation of Economic and Trade Development in Spanish Speaking Countries (2/0): During this course, the current state of economic and trade development in the most Spanish speaking countries will be explained to students to analyze individual and regional economies, by means of macroeconomic development models and microeconomic performance, with an emphasis in foreign trade.

F1302 Advanced Chinese MOOC (2/0): The objective of this course is to train students to use Spanish to facilitate the teaching of Chinese as a foreign language and to acquire basic Spanish and Chinese language learning knowledge in order to reach this objective. This course will prepare students
to cultivate the reading and writing ability of Chinese characters; learn Chinese vocabulary and syntaxes for self-introduction, greeting, telling time, ordering a meal, and discussing interests through various topical lessons; and learn basic conversation and develop an ability to speak Chinese.

**F1303 Weekly Spanish News and the Political Economy of International Relations (2/0):**
This course focuses on topics such as the diverse politics, economies, societies and cultures found in Latin American countries, as well as Spain from the point of view of international political economy. Through class analysis and discussion students will develop an international perspective and at the same time gain insight into international relations, economic development, and publicized diplomatic activities of Latin America. This is a class that combines both theory and practice, which broadens the knowledge of those who intend to take exams that relate to public diplomacy, news, business transactions, investigations, security and intelligence personnel.

**F1304 Appreciation and Analysis of Translation Works (2/0):** The purpose of the course is to introduce translation theory; and as a result, the role that translation plays in cultural and literary fields will be identified. Through practice on various genre of texts practiced in the course one can better understand the art of translation.

**Digital Chinese MOOC (0/2):** The main purpose of this course is to train students how to prepare Chinese teaching videos and complete the Spanish version of multicultural digital Chinese textbooks. The principal method to deliver the content will be to film video mini-lectures, some courses will also provide accompanying downloadable slides, or optional readings.

**Hispanic Cinema (0/2):** During this course, students will acquire knowledge of history of Hispanic Cinema, basic cinematic concepts, and narration.

**Lectures on the Economic and Trade Practices of Spanish Speaking Countries (0/2):** In this course, we will invite industry experts or entrepreneurs to lecture or share their experience. By these, we will let students become familiar with the situation and prospect of industries and know how to apply their knowledge in practice.

**Theories of National Development: The Case of Spanish Speaking Countries (0/2):** After World War II, modernization of Spanish-speaking countries (especially Latin American countries) has been fiercely debated. The purpose of this subject consists of interrelated analysis between the doctrines of modernization, dependence, structuralism, neoliberalism, neo-structuralism and post neoliberalism, etc., with respect to their theories and practices. And through these analyzes and cross studies in Spanish, the students of the class will go a step further in learning and recognizing the most important models of economic and social developments in Spanish-speaking countries.

**Practice of Literary Translation (0/2):** The purpose of the course is to introduce translation theory; and as a result, the role that translation plays in cultural and literary fields is identified. Analysis of texts from different genres practiced in the course can help students better understand the art of translation.

**F1276 Multiple Perspectives on Translation Studies (0/2):** The purpose of the course is to introduce the translation studies; and as a result, the role that translation plays in culture, literature, and history will be better understood.
DEPARTMENT OF FRENCH

Degrees Offered: B.A., M.A.

Chairman: Chia-jui Chu (朱嘉瑞)

The Department

The Department of French has long been devoted to promoting students’ language ability and knowledge, and to introducing various research methodologies. Evaluated as one of the best French departments in Taiwan, the Department launched a partner relationship with France-Comte University in 1989. Subsequently, in 1994, twenty juniors were sent to this university for the very first time. Since then, the one-year Junior Year Abroad Program has enhanced the Department’s relationships with the universities of Lyon III, Louvain-la-Neuve, Haute École-Léonard da Vinci, Paris IV and Nice, which have also been sending students to Tamkang on exchange programs. These young European students cement the friendship already existing between our institutions, and greatly contribute to the French learning environment at Tamkang University.

Always eager to update our teaching techniques, we undertake a curriculum reform with the goal of preparing our students for the DELF (Diplôme d’Etudes de Langue Française) and the DALF (Diplôme Approfondi de Langue Française), considered international references of excellence.

We are also working on the Internet front, constructing a permanent infrastructure for our web page content, and establishing numerous links to relevant French web pages. A project consisting of the indexing of French sources will allow our faculty and students to more efficiently use this wealth of information.

In the future, we will enhance our distance learning courses to adapt to an increasingly digitalized world while staying true to our foremost task of teaching French.

Master’s Program

The Master’s Program of French was established in 2002. It aims to nurture specialists in French studies, promoting cultural exchange between Taiwan and France.

Faculty

Professors
Hsi-deh Wu (吳錫德); Shu-chuan Yang (楊淑娟); Gilles Boileau (徐鵬飛);
Zong Liang (梁蓉); Kuo-lei Chang (張國蕾)

Associate Professors
Chia-jui Chu (朱嘉瑞); Bernard Han (侯義如); Hun-hui Hsu (徐琿輝);
Mohamad Kerkalli (葛浩德); Pei-wha Lee (李佩華); Pierre Vauthier (儲善平);
An-chyun Jeng (鄭安群)

Assistant Professor
Li-chuan Chen (陳麗娟); Marie-Julie Frainais-Maître (馬朱麗); Jun-pei Liao (廖潤珮);
Simon Landron (藍士盟)

Degree Requirements

1. Requirements for a degree of B.A. in French:
   Completion of 128 credits of courses, including 92 credits of required courses and at least 19 credits of elective French courses.

2. Requirements for a Master’s degree in French:
   Completion of 30 credits of courses and 4 credits of Seminar. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.
Course Descriptions

Undergraduate Courses

A0409 French Translation I (2/2): Using French chansons, actuality, and fables, this course discusses basic problems of Chinese/French translation.

A0410 French Translation II (2/2): This course deals with intermediate problems of translation from Chinese into French through the syntax and structure of sentences and helps students understand the differences between Chinese and French.

A0421 Introduction to French Literature (0/2): Introduce the famous works of French literature and encourage students to read and enjoy the pleasure of reading in French literature.

A0424 Introduction to French Literature (2/0): This course aims to provide students with a general overview of French literature in aspects of historical background and knowledge of key events/characters/terms. This course also introduces modern theories in French Literature.

A0435 French Drama (2/2): This course introduces the development of French drama, appreciation of individual works and practice in staging through the study of French drama.

A0439 French Conversation I (3/3): This course aims to train students to speak basic French through conversation practice and familiarize them with oral expressions through practical exercises.

A0440 French Conversation II (3/3): This course aims to train students to speak intermediate French through conversation practice and familiarize them with oral expressions through practical exercises.

A0441 French Conversation III (2/2): This course aims to train students to speak advanced French through conversation practice and familiarize them with oral expressions through practical exercises.

A0442 French Conversation IV (2/2): This course aims to train students to speak fluent French through conversation practice and familiarize them with oral expressions through practical exercises.

A0448 French Phonetics (2/0): The objectives of the course are threefold: (1) Pronounce correctly French vowels and consonants; (2) Manage a good French Intonation and rhythm; (3) Learn differences between French phonetic and Chinese phonetic.

A0449 French Language Laboratory Work (1/1): This course teaches elementary French grammar with writing practice in short sentences and essays, and helps students acquire a basic knowledge of linguistics, intonation and pronunciation.

A0906 French Film and Literature (2/0): This course discusses the relationship between French movies and literature via French film masters’ classical masterpieces. This course also helps students understand and analyze different viewpoints through movies.

A1006 French Grammar I (2/2): This course deals with the development of fundamental French grammar and practices in writing short sentences through an analysis of sentence structures.

A1055 French Grammar II (2/2): This course deals with the development of intermediate French grammar and practices in writing long sentences through an analysis of sentence structures.

A1056 French Composition I (2/2): This course teaches basic composition skills through the practice of composition texts. Students will learn how to make complete and logical sentences and write compositions.

A1057 French Composition II (2/2): This course teaches advanced composition skills through the practice of composition texts. Students will learn how to make complete and logical sentences and write compositions.
A1239 The History of Art (2/0): This course presents works of art belonging to Europe, from late Roman era to the 19th century. We will present those works in their context.

A1434 French Grammar III (2/2): This course helps students to learn how to infer the rules of French grammar from examples and understand the rules and structure of the French language, to better express themselves in writing, revising, and analyzing the rules of grammar through the reading of articles.

A1530 Theory and Practice of French Teaching (2/0): This course aims to help students understand how to teach French through related topics like pronunciation, diction, grammatical rules, and French teaching methods.

A1853 Simultaneous Interpretation (2/2): This course offers interpreting practice in small groups on various topics based on actual ability, starting from Chinese to French and moving into both directions. Theory, experience sharing, corrections and advice will be given.

F0379 Contemporary French Thought (2/2): This course will introduce the works of famous French philosophers, such as Henri Bergson, Jean-Paul Sartre, Jean Baudrillard, Roland Barthes, Georges Bataille, Michel Foucault, and Gilles Deleuze.

F0646 French Correspondence and Composition (2/2): This course aims to enhance students’ composition ability by providing practice in different forms of correspondence such as personal, administrative and commercial, emphasizing also the cultural aspects of everyday life in France.

F0705 French Reading and Writing I (3/3): This course deals with the elementary grammar and vocabulary of French and helps students improve their reading skills through extensive reading in French.

F0706 French Reading and Writing II (3/3): Through extensive reading, this course deals with intermediate grammar and vocabulary of French and helps students improve their reading skills.

F0708 Approach to the Study of Linguistics (0/2): This course focuses on linguistics, not only the syntax analysis, semantic analysis, lexical domain, but also the acquisitions of second language. Therefore, via the concept, we find out that it associates always with us in the daily life.

F0710 News from Papers and TV (0/2): The aim of this course is to focus on news about French society, to understand French culture by reading this news, and to analyze the differences between Taiwan and French society and culture.

F0759 Reading and Writing of French Literature I (2/2): This course introduces French literature through a systematic study of French writers, the history of France, and French literary development.

F0760 Reading and Writing of French Literature II (2/2): This course examines French literature through a systematic study of French writers, celebrated philosophers, the history of France and French literary history.

F0786 Introduction to the Everyday Life Culture of France (2/0): This course describes factors that have influenced French lifestyle, culture and art policies, as well as development and change. Students will see how French culture and art policies have helped to preserve the rich traditions that still exist even today.

F0863 Introduction to the Literature and Language of French-Speaking Areas (0/2): The language and culture aspects in this thesis discuss the elements of the culture and how to learn the language, the literature through these texts from French-speaking areas.

F0864 Introduction to French E-Learning (2/0): Using a linguistic theory to understand the search engine's principle and selecting the French websites information. For this, we teach them the technics and tools needed then we present a website project.
F1086 French Reciting and Reading (2/0): Object of this course is getting improvement in oral expression and comprehension through reciting and reading selected texts of various subjects in French.

F1149 An Omnidirectional French Learning Course (2/0): This course introduces several aspects of French life, including issues of European Union and education, diplomacy, business, culture, and the art of France.

F1185 Global Communication and Career Preparation (2/0): This course tends to help students to prepare for their professional career and to learn more communication skills.

F1186 Workplace Practices and Industry Cooperation (0/2): In this course, students will be able to explore the job market for French Literature graduates, simulate workplace and ethics, understand industry-academic cooperation, prepare for related practicum and job positions, and discuss potential future industry-academic cooperation.

F1187 French Culinary Art and Civilization Program (2/0): The French culinary art and civilization program contains a series of French gastronomy lectures and offers an opportunity to explore France, its culture, culinary art and civilization.

F1237 Apprentice Program (2/0): This course pursues two main objectives; the first is to help students make the most of their career opportunities, while the second is to provide support to firms looking for talent.

F1307 Cultural Readings of French Gastronomy (0/2): This course is an introduction to French culinary discourse, since great gastronomic texts from the beginning of the 19th century to the Red Guide current. Students will get acquainted with French gastronomy, classified patrimonium of mankind.

Master’s Program

A0407 French Writing (2/2): The objective of this course is to introduce students to the complexity of the text and provide them with an in-depth knowledge of the understanding and production of written French.

A0756 Linguistics (2/0): The goals of this course are to learn how to make right description for several situations, learn the theory of linguistics, learn how to tell whether a sentence is right or wrong, and be able to explain the reason why.

A1553 Contemporary French Thought (0/2): This course will present the development of French thought in the context of sociological and political changes in France from the end of the Second World War, onward.

A2901 Audiovisual Art and Cinema (2/0): This course provides an overview of experimental film, video, photography, installation, and the relationship of the cinematic forms to contemporary art.

F0242 French Oral Expression (2/2): The goal of this course is to teach students how to express themselves efficiently and to improve their ability in French communication. In addition, students planning to study at Lyon University will need to specifically strengthen their French language proficiency.

F0312 Methodology and Theory (2/0): This course is a survey of major theories of literary criticism such as semiotics, psychoanalysis, feminism, etc., in the context of recent debates among French intellectuals, particularly with regard to the modernism/post-modernism controversy.

F0767 French Cinema: Paris as Myth and Urban Space (0/2): Cinema is considered the 7th art in France and is a central aspect of the 20th and the 21st centuries French culture. This course focuses specifically on contemporary French and Francophone cinema. Students will learn how to approach film as art, culture, history and entertainment.
F0771 Studies of the Modern and Contemporary French Novelists (2/0): This course provides readings, discussion and research on French novelists in the modern era.

F0773 Translation Atelier: Chinese to French (2/2): (1) Translation exercises (from French to Chinese) through studies of economic, politic and social sciences readings; (2) each student makes his choice for a semester work and tries to translate with direct and individual help of the professor; (3) sharing of experiences through all the semester works, whole class mobilized.

F0925 Modern French Drama (3/0): This course presents the development of French modern drama in the 20th century; the creation of script, stage performance; and actors, playwrights and directors.

F1072 French Cultural Policy (0/3): Our course introduces the historical development of the cultural policy in France--from the 16th to the 21th centuries. By analyzing the structure and function of the Ministry of Culture, which was established in 1959, we aim to define the importance of the cultural policy for the development of culture in France.

F1073 Teaching Methods of French (0/2): To cultivate French teaching experts possessed with practical and theoretical experiences in foreign languages teaching through realistic courses practices and drills.

F1075 Methodology and Advanced French Writing (2/2): This course introduces students to the French sociological and historical schools, with explanations of key concepts and their application to French studies.

F1089 Space and Culture (0/2): This course will introduce a selection of world famous novels (one per week), including The Little Prince, Les Misérables, The Phantom of the Opera and many others, essentially from the 19th and 20th century.

F1178 Modern French Cultural Studies (0/2): This course introduces what constitutes modern French culture through the study of contemporary social themes. The course will use Cultural Studies, an interdisciplinary approach that appeals to critical literature, media studies, sociology, philosophy, anthropology and history. It will question the beliefs, practices of social groups in French culture by critically considering what causes such behavior. At the end of this course, students will be able to identify, describe, and analyze the constitutive ideas of contemporary French culture.

F1179 Strategy of Art Organization (0/2): This course offers a general concept and skills concerning the fields below: museum management, curatorial skills, programming, etc. The courses will base on the case study.
DEPARTMENT OF GERMAN

Degree offered: B.A.

Chairman: WU, Wan-Bau (吳萬寶)

The Department

German studies at Tamkang began in 1963 as a German program within the Department of Western Languages and Literatures. In 1975, the program became an independent department. Since 1984, students of the German Department have had the opportunity to participate in summer courses in Germany. In 1994, the Department established the Junior Year Abroad program. Since then, about one third of all students have spent their junior year as students at Bonn University, Germany.

During the first two years of the four-year program, a strong emphasis is given to building a solid foundation in practical German. In their junior and senior years, students choose their specialization according to their interests and career plans. Some pursue a classical humanities syllabus in German literature and cultural history; others who develop a deeper interest in one particular author or issue can pursue their interest in individually designed tutorials. Another option of specialization prepares students for a career in the business environment. The Department offers courses in business German, German-Chinese interpreting and, in coordination with a course offered at the college level, in intercultural communication.

The German Department considers each student as individuals with particular interests, and helps students develop a career plan based on their personal circumstances. The overall policy of the department may be characterized as customized internationalization. Students have the opportunity to arrange their studies at the Department according to three different modules, each of which offers a distinct international study experience.

Standard Module: students complete a four-year program at Tamkang University. They are encouraged to participate in one or more summer courses in Germany. The Department is doing its best to include a localized form of internationalization into this module by providing opportunities for students to develop contact with the German community in Taiwan.

Internationalized Module 3 Plus 1: Students participate in the Junior Year Abroad program. They study for three years at Tamkang University and one year abroad. There are two versions of this module. Students may spend their junior year either as program students at the University of Bonn or as exchange students at one of our partner universities in German-speaking countries. Presently, exchange programs have been established with the University of Bonn, the University of Cologne, and the University of Vienna. Arrangements with other universities are under preparation. Exchange students usually go to their host universities either individually or in groups containing no larger than three students.

Internationalized Module 3 Plus 3: This module is designed for students who plan to study abroad for an advanced degree after graduation from Tamkang. Students participate in the exchange version of the Junior Year Abroad program. Their work as exchange students will be arranged in such a way that it facilitates study for an advanced degree later at the host university. Upon graduation from Tamkang, students return to the host university to participate in an M.A. program. Due to their work during their stay as exchange students, the time frame necessary for completing the program is reduced. The time required hinges upon the qualifications of the student and the regulations of the particular university. A time frame of two years may be realistic. Students interested in this module are advised to talk to the chair as early as possible.

Faculty

Professor Emeritus
Reinhard Düssel (狄殷豪) Chung, Ying-yen (鍾英彥)

Professor
Wu, Wan-Bau (吳萬寶)

Assistant Professors
Chang, Hsiu-chuan (張秀娟); Holger Steidele (施侯格); Cheng, Hui-chun (鄭慧君); Michael Schöns (孫敏學); Yen, Huei-ling (顏徽玲); Lin, Yu-shien (林郁嫺)
Degree Requirements
Requirements for a degree of B.A. in German:
Completion of 128 credits of courses, including 92 credits of required courses and 36 credits of elective courses.

Course Descriptions

Undergraduate Courses

A0098 Intermediate German Reading (4/4): This course emphasizes building up students’ reading ability by reading different types of articles and analyzing the construction of sentences to expand their vocabulary and familiarize themselves with the grammar they have already learned.

A0320 Mythology and Theology (2/2): This course introduces Greek and Roman mythology and bible reading to acquaint students with the social norms and spiritual world of Western civilization, thereby helping students’ better understand related fields.

F0644 German Juvenile Literature (2/2): This course offers an introduction to German fairy tales, folklore, and picture stories.

A0772 German Composition I (2/2): This course is an introduction to German composition for Chinese students who are new to this area. In addition, an emphasis is placed on the correct semantic use of vocabulary in compositions. Students will write a number of compositions.

A0773 German Composition II (2/2): This course emphasizes the use of written German to express personal experiences and the basic form of the research essay. Students will learn to collect information on issues of their choice from the German pages of the Internet, take notes, organize their notes, and present the information collected in short essays.

A0774 German Composition III (2/2): The main objective of this course is to write German essays and term papers. Students will become familiar with a wide variety of text types and writing styles ranging from practical purposes to creative writing. Academic writing is also introduced.

F0804 German-Chinese Translation I (2/2): This course helps students learn and practice theories and techniques in translation from German into Chinese. Students will be given numerous examples and exercises.

A0782 German-Chinese Translation II (2/2): This course focuses on problems of translation and on an analysis of typical difficulties in translation.

A0786 History of German Culture (2/2): This course offers a comprehensive survey of German cultural history, including such periods as Germanic, medieval, religious revolution, baroque, enlightenment, classicism, romanticism, realism and the 20th century.

F0603 History of German Literature I (2/2): This course provides an overall view of the trends and epochs of German literature from the Chivalric period to 1945, and studies those representative works of each period or trend as well as various literary approaches, and further compares some of them with Chinese writers.

F0604 History of German Literature II (2/2): This course gives an overview of the trends and epochs of German literature from Medieval Literature to 1945 and studies the representative works of each period.

A0796 German Conversation II (2/2): In this course, students are taught to have conversations in the German language with special emphasis on grammar and colloquial use of the German standard language.

A0797 German Conversation III (2/2): This course provides conversation training at an advanced
level of content based conversations to develop fluency and conversation strategies. Also, students will expand their vocabulary.

A0800 German Language Laboratory I (2/2): This course aims to improve students’ ability in pronunciation, sounding out sentences and articles correctly, and also in their listening and speaking ability.

A0801 German Language Laboratory II (1/1): This course is a continuation of German Language Laboratory I with an intention to further improve students’ ability in speaking and listening in German.

A1508 Journalistic Reading and Writing in German (0/2): This course offers practice in reading German newspapers and provides instruction in the major elements of the language of journalism and an introduction into feature news writing. It will also help students get acquainted with the German-speaking world by making use of different media and styles of reporting. Background information in various areas, among them politics, economics and education, will be provided to facilitate the understanding of what is presented in the media.

A1513 Tourism in German (2/0): The main objective of this course is to help students gain a better understanding of the usage of the German language in tourism industries in order to expand the horizon of student’s career opportunities after their study. Apart from teaching the German language, this course will also teach methods of communication in the tourism industry.

A1514 German Business Letters (2/0): This course is an introduction to German business letters that covers the topics structure and form, inquiries, price, quality, quantity, packaging, marketing, offers, orders, L/C, documents, insurance, shipment, draft, payment and claim.

A1516 Basic German Grammar (4/4): This course introduces fundamental German grammar with an emphasis on sentence patterns and basic grammar to help students build a good basis for German study.

A1517 Basic German Reading (4/4): This course aims to help students understand German syntax so as to strengthen their writing ability through basic sentence practice and interesting articles.

A1569 German Conversation I (2/2): This course aims to improve students’ ability in listening and speaking German by listening to language tapes, group discussion and class communication.

A1669 Business German (0/2): This course focuses on reading and writing business texts: emphasizing special traits in business transactions, procedures of international trade and the process of business inquiries, offers, quotations, contracts, B/L opening, etc.

F0052 Intermediate German Grammar (2/2): This course covers German grammatical rules, especially those particularly difficult for Chinese-speaking students. Students are required to take Basic German as the prerequisite.

F0112 Chinese-German Interpreting (2/0): This course helps students develop competency in interpreting by providing chances for interpreting (protocol routine, weather, dinners and parties, Taiwan agriculture, visiting places of Interest, culture in Taiwan, on international economic relations and foreign trade, Taiwan industry, politics in Taiwan).

F0238 Practice in German Grammar (0/1): This course emphasizes aspects of German grammar difficult for Chinese-speaking students. Dedicating more time to such aspects in their first year, students will acquire a basis in German grammar more solidly than the regular grammar course alone could provide.

F0239 Drama (2/2): This course offers a historical and practical introduction to the world of German drama and theatre. Part of the course is the production of one play each term.

F0639 Comparative Studies in Chinese and German Culture (0/2): This course offers an introduction to cultural policy situation, the economy today, Chinese/German youth (A generation at the turning point of trends), the educational system, research and science, Chinese/German women, press, radio, television and the cultural scene.
F0721 Perspectives on German-speaking Countries (2/0): This course invites experts from various fields to lecture regarding their views on German-speaking countries in order to help our freshmen gain a better understanding of the German language and culture.

F0795 Advanced German Conversation (2/0): This course is designed for students at the B1-Level. Therefore, in several training meetings, students' speaking, listening, and comprehension abilities are honed in accordance with the test format of the certificate examination.

F0797 Exam Preparation “Certificate German B1” (0/2): This course aims at helping students to pass the Zertifikat Deutsch (ZD) examination. They master the main grammatical structures and are capable of understanding and taking part in routine conversations. They are also capable of describing simple matters orally and in writing and understanding texts on general topics.

F1242 The Political System of Germany (2/0): This course helps students understand the institutions and functioning of the German Federal system. The process of decision-making, the political spectrum, the political participation of the German people, and the role of social media will be highlighted.

F0798 Introduction to Germanic Linguistics (0/2): This course focuses on the knowledge acquisition of the function and mode of the German language. It also trains students in basic skills in handling linguistic issues.

F0932 German Tutorial (0/2): This course is designed for those who failed to pass the standard set by TKU for the German proficiency test.

F0969 Legal German (2/0): This course focuses on the legal structure in Germany. Students will learn basic German legal language and knowledge related to German law. By taking this course, students will learn to read and understand basic contracts in German and broaden their overall language skills.

F0970 German Technology (0/2): Germany is a highly industrialized country. This course aims to broaden students’ knowledge and language skills in the area of German technology. The course also hopes to serve as a platform, allowing students to come in contact with major German corporations in Taipei such as Bayer, Merck, Daimler, Volkswagen, and BASF.
DEPARTMENT OF JAPANESE

Degrees Offered: B.A., M.A.

Chairman: Chiou-guey Tzeng (曾秋桂)

The Department

The mission of the Department of Japanese is to offer a variety of flexible courses and programs to meet numerous social needs, and educate students to be highly qualified citizens with advanced language skills and a global sense.

The Department of Japanese, originally the Department of Eastern Languages, was established in 1966, and has been offering courses on the Japanese language, economy, politics, and cultural study of Japan. Because of a rapid increase of students studying Japanese and Japanese culture and society at Tamkang University, the Department started to offer two freshman classes in 1973. In 1985, the Department of Eastern Languages was renamed the Department of Japanese. With continuous growth in student numbers, the Department of Japanese currently accepts about 240 undergraduates every year in three day-time classes (about 180 students) and one night-time class (about 60 students). The Department has also offered an M.A. degree since 2006.

The Department of Japanese was the first department at Tamkang University to set up one-year study abroad programs with partner universities in Japan. Every year, approximately fifty students participate in the programs and study in Japan for one academic year.

The Department of Japanese has a number of Japanese textbooks, academic journals, and audio and video teaching materials about Japanese and Japanese culture and society. Students and faculty can watch Japanese live TV programs at any time using a new satellite system. Students can also freely use Internet web-browsing and Japanese word-processing software any time with computers that use the most recent Japanese operating systems.

Faculty

Professors Emeritus
Bo-tao Chen (陳伯陶); Pi-shoung Lin (林丕雄)

Professors
Chiou-guey Tzeng (曾秋桂); Ochiai Yuji (落合由治)

Associate Professors
Chong-ling Chang (張瓊玲); Chang-huei Liou (劉長輝); Chuen-yang Peng (彭春陽);
Pai-hua Chiueh (陳百華); Yaw-huei Ma (馬耀輝); Wen-shun Chiang (江雯薰);
Kazuo Horikoshi (堀越和男); Chi-wen Lin (林寄雯); Jiin-fen Ku (顧錦芬);
Tomita Akira (富田哲); Hsin-Yu Shih (施信余); Mei-ling Wang (王美玲);
Yu-Ching Liao (廖育卿); Wen-ju Lee (李文茹); Ling Hsu (徐佩伶);
Chia-lin Wang (王嘉臨); Uchida Yasushi (内田康); Nakamura Kanae (中村香苗);
Pei-Ching Tsai (蔡佩青)

Assistant Professors
Yi-Yun Wang (王憶雲); Tien-Pao Wang (王天保); Kikushima Kazunori (菊島和紀);
Hsin-Yin Tsai (蔡欣吟); Yuchin Lai (賴鈺菁); Yeh-Ling (葉夌)

Lecturers
Tze-hsin Chung (鍾慈馨); Kawamura Hiroyuki (河村裕之)

Degree Requirements

The Department of Japanese offers two programs for both B.A. and M.A. degrees.

1. Requirements for a B.A. degree: (Effective from 2018 freshman)
   Completion of 128 credits of courses, including 96 credits of required courses and 32 credits of...
elective physics courses.

2. Requirements for an M.A. degree:
   Completion of 34 elective credits of courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

A0178 Japanese Composition I (6/6): To improve students’ writing skills in Japanese, this course offers an introduction to basic Japanese writing styles by analyzing and explaining contemporary Japanese phrases, clauses, and sentence structures.

A0179 Japanese Composition II (2/2): This course aims to strengthen students’ overall writing skills by discussing and explaining contemporary Japanese.

A0190 History of Japanese Literature (2/2): This course offers an introduction to the history of Japanese literature. It explains and discusses selected Japanese works of each era in the history of Japanese literature.

A0197 Selected Readings in Japanese Literature I (2/2): This course offers an introduction and appreciation of renowned modern and classical Japanese novels and selected writings.

A0198 Selected Readings in Japanese Literature II (2/2): This course emphasizes an appreciation of renowned classical Japanese novels and selected works. Modern Japanese works are not included.

A0212 Japanese Politics (2/2): This course offers an introduction to contemporary Japanese politics. It deals with and discusses the modern political systems in Japan starting from the Meiji era.

A0235 Introduction to Japanese (2/2): This course provides basic and intermediate instruction in Japanese. Students will practice composing a variety of Japanese poems of different styles.

A0254 Japanese Conversation I (2/2): Conducted in small groups, this course aims at cultivating students’ interest in Japanese culture and society, and reinforcing students’ basic speaking and listening skills in Japanese.

A0256 Japanese Language Laboratory I (1/1): This course comprises language laboratory drills in basic Japanese with a special emphasis on listening and speaking.

A0260 Japanese Language Laboratory (0/0): This course offers language laboratory drills in basic Japanese as part of the course work for Japanese Language Laboratory I and Japanese I.

A0261 Japanese Language Laboratory II (0/0): This course offers language laboratory drills in intermediate Japanese as part of the course work for Japanese II.

A0565 Japanese III (2/2): This course aims to reinforce students’ over-all Japanese proficiency by
teaching advanced-level Japanese sentence patterns and daily language usage referring to Japanese literature.

**A0926 Newspaper Reading (2/2):** Articles of various topics including national and international issues in Japanese newspapers are introduced and explained in Japanese. Students in this course are strongly encouraged to read the selected articles and express their own opinions.

**A1104 Japanese Society and Culture (2/2):** The purpose of this course is to lead students to look at various aspects of Japanese society and culture deeply, and analyze and discuss them objectively and academically.

**A1107 Japanese Conversation IV (2/2):** The goal of this course is to enable students to communicate with more sophisticated and advanced structures and with a large vocabulary on a variety of topics.

**A1531 Teaching Japanese as a Second Language (2/2):** This course deals with the basics of teaching Japanese as a second language, including course planning, production and usage of teaching materials, evaluation, etc.

**A1645 History of Japanese Philosophy (2/2):** This course deals with the development of Japanese philosophy and culture referring to Chinese and Western histories and cultures. Modern philosophy and culture in Japan are also discussed in this class.

**A1755 Japanese Word Processing (1/0):** This course deals with the input method of Japanese characters into the computer and composing Japanese documents by word-processing software on the computer.

**A1757 Business Applications of Japanese (2/2):** Rules and styles of Japanese in business documents and frequently used phrases and sentences in business documents and/or letters are introduced and explained in this course.

**A1759 Research Method of Japanese Linguistics (2/2):** This course discusses how students should conduct their research on Japanese linguistics so as to help them complete their graduation research and theses.

**F0038 Introduction to Japanese Enterprises (2/2):** Developmental history, unique characteristics, various problems, and futures of Japanese enterprises are analyzed and discussed in this course.

**F0051 Japanese Translation and Interpretation (2/2):** This course offers an introduction to theories and practices of modern Chinese-Japanese translation and oral interpretation utilizing audio and visual materials.

**F0113 Japanese I (Reading) (4/4):** The fifty sounds of Japanese and their symbols are introduced and explained in this course; then basic phrases and sentences are introduced and analyzed.

**F0114 Japanese I (Grammar) (2/2):** Basic Japanese phrases and sentence structures are analyzed and discussed in this course. This course also focuses more on the grammatical features of Japanese sentences at their beginning level.

**F0115 Intermediate Japanese Reading (4/4):** This course provides intermediate level instruction in Japanese, focusing on complex Japanese phrases and sentence structures based on the knowledge learned in Japanese I.

**F0116 Intermediate Japanese Grammar (2/2):** Emphasizing explanation and discussion, this course teaches Japanese sentence structures and grammar so as to strengthen students’ writing ability.

**F0270 Guidance for Bachelor Thesis (1/1):** This course offers an introduction to research methods of studying Japanese language, culture, and society. Formats and styles for academic theses are also explained in the class. All senior students are required to submit a graduation thesis at the end of the final semester.
Master’s Program

F0400 Translation Theory (2/2): This course will involve reading translation-related articles including deep investigations and discussion. Also, in-class practical translation exercise and translation analysis are included.

F1308 International Understanding and Foreign Language in Primary Education (2/2): This course analyzes the design of curricula involving international education in Taiwan and Japan, looking for development directions and specific practices of multicultural symbiotic societies and foreign language education.

F1311 Cross Cultural Exchange between Taiwan and Japan (2/2): This course is designed by TKU and Business Breakthrough University, TKU’s partner university. Webcast, Classroom instruction, Videoconferencing and BBS discussion will be included in the course. The course aims to encourage students to understand in depth the various aspects of exchanges conducted between Taiwan and Japan and think of the meaning by fully paying attention to the movement of people, objects, information and so forth between the two spheres, and through discussions among students.

F1322 Introduction to Japanese Poetry (Waka) (I) (II) (2/2): This course introduces the history of ‘waka’, which had been the core Japanese literature, including its rhetoric, for a consider period of time. In addition, it also looks at how ‘waka’ has influenced other fields of art.

A2904 The Studies of Haruki Murakami (I) (II) (2/2): Practice and application of today's literary criticism theory.

F1312 Japanese Pragmatics (I) (II) (2/2): This course aims to familiarize students with various theoretical backgrounds and analytical methods to study pragmatics and discourse analysis in Japanese.

F1334 Readings of Selected Chinese and Japanese Syntax Papers (I) (II) (2/2): The course is an introduction to Generative Grammar. Students will be assigned a few readings about Syntax, mainly focused on Japanese, Chinese and English languages.

T0294 The Study of Modern Japanese (2/2): This course studies various subjects dealing with modern Japan and the Japanese language.

F1175 Syntactic Theory and Method for Studying Japanese Grammar (I) (II) (2/2): This course familiarizes students with basic theories of formal syntax. Students are required to read papers on Japanese syntax and lexical semantics for their understandings of distinct grammatical phenomena in Japanese.

F1315 Introduction to Literature during the Meiji to Taisho Eras (I) (II) (2/2): A study of literature of the Meiji era to the Taisho Era, especially focusing on Romanticism and Naturalism in the Japanese language.
DEPARTMENT OF RUSSIAN

Degree Offered: B.A.

Chairman: Hwang-shing Liu (劉皇杏)

The Department

The Department of Russian was established in 1993 with the aim of developing students’ language ability in the practical applications of the language, to improve their knowledge of Russian people and culture, and train them for careers in diplomacy, economic affairs, and international trade.

Faculty

Associate Professors
Ching-gwo Chang (張慶國); Shwu-yann Su (蘇淑燕); Hwang-shing Liu (劉皇杏);
Natalia Bourovtseva (龔雅雪); Tatiana Naydina (那達怡)

Assistant Professors
Hsin-yi Kuo (郭昕宜); Ying-ying Cheng (鄭盈盈); Svetlana Zaretskaya (史薇塔)

Degree Requirements

Requirements for a B.A. in Russian:
Completion of 128 credits of courses, including 112 credits of required courses and 16 credits of elective courses.

Course Descriptions

Undergraduate Courses

A0693 Basic Russian I (4/4): This course offers an introduction to fundamental Russian with an emphasis on sentence pattern practice.

A0696 Basic Russian II (4/4): This course is a continuation of the study of fundamental Russian with more complicated sentence pattern practice.

A0846 Basic Russian III (2/2): This course focuses on practice in reading abridged Russian novels with an emphasis on the structure of language patterns.

A0885 History of Russian Literature (2/2): As an overall review of periods and trends in Russian literature, this course studies and analyzes representative works of each period.

A0911 Russian Grammar I (4/4): Fundamental Russian grammar and practice in writing short sentences are central to this course.

A0912 Russian Grammar II (3/3): This course focuses on fundamental Russian grammar and, in particular, on sentence structure.

A0913 Russian Conversation I (2/2): This course focuses on practice in speaking Russian.

A0914 Russian Conversation II (2/2): This course focuses on speaking Russian in various common and special topics.

A0915 Russian Conversation III (2/2): In this course, students will practice speaking Russian in various special topics.

A0916 Russian Language Laboratory I (1/1): This course emphasizes training in listening and speaking everyday Russian with more complicated structures.
A0917 Russian Language Laboratory II (1/1): In this course, attention is given to training in listening and speaking everyday Russian with more complicated structures.

A1375 Russian Folk Music (0/2): This course offers students an understanding of Russian song lyrics that invoke a variety of feelings. It also aims to cultivate students’ interest in Russian music and the musical art of singing.

A1480 Introduction to Russia (2/0): This course offers a general survey of Russia with elements from history and culture.

A1518 Russian Conversation IV (2/2): This course trains students in speaking Russian on different special topics.

A1519 Basic Russian IV (2/2): This course is devoted to widening students’ knowledge in vocabulary, grammar, intonation, reading and communication.

F0384 Oral Translation of Commercial Russian (0/2): This course is an advanced course in business correspondence, commercial negotiations, advertising and other aspects of business activity. Its aim is to provide students with solid knowledge of Russian business activities.

F0714 Business Russian 1 (2/2): This course provides the basics of Russian lexicology in the field of commerce. Its aim is to make students familiar with the most important requirements concerning business terminology and etiquette.

F0717 Business Russian II (2/2): This course further develops the main premises of Business Russian (1) It focuses on the issues of commercial correspondence and negotiations.

F0761 Russian Composition 1 (2/2): This course focuses on teaching writing skills in accordance with the requirements of the 1st certificate level (TORFL-1).

F0791 Advanced Russian Grammar (2/2): This course focuses on the knowledge of intermediate level of Russian grammar and syntactic usage. The purpose of the course is to provide students with a comprehensive instruction of practical Russian grammatical forms and syntactic usages.

F0793 Introduction to Russian Culture (2/2): This course offers a general review of the development of Russian culture and fine arts from the 10th century till the beginning of the 20th century with special emphasis on major artistic styles and ideological trends.

F0806 Russian Composition II (2/2): Course content includes the following: practice in basic Russian writing; analysis of grammatical structures and common mistakes and practice in writing Russian paragraphs and short essays.

F0872 Advanced Russian (2/2): This course aims to help students pass the TORFL level one examination. In this class, instructors will use past questions to demonstrate how to prepare for the vocabulary, grammar, reading, conversation and listening comprehension tests.

F0968 Russian Plays (0/2): This course aims to help students understand the deep complexities of Russian culture by examining famous Russian dramas.

F1189 Tourism Russian (2/0): This course provides students with knowledge about tourism and helps to expand students’ tourism-related vocabulary in Russian.

F1291 Seminar in Business Russian Practices (2/0): This course will invite experts and scholars to analyze the current situation of Taiwan's enterprise investment in Russia, aiming to help students to understand the economic and industrial developments in Russia and lead the students to experience the workplace culture.
F1292 Professional Internship in Russian Language (0/1): Students taking this course will arrange on-site practical training at an organization. The course helps students to gain professional work experience in business and industry.

F1293 Methods for Teaching Chinese as a Foreign Language Using Russian (0/2): This course provides instructor-training for the teaching of Chinese as a second language. Elective students will be looking to provide instruction to Chinese teachers whose native language is Russian, or to foreign countries interested in publicity and promoting Chinese learning.

F1362 Russian Audio-Visual Presentation (1/1): This course emphasizes training in listening, hoping to help students pass the Russian listening test.
COLLEGE OF INTERNATIONAL AFFAIRS
COLLEGE OF INTERNATIONAL AFFAIRS

Dean: Wang, Kao-Cheng (王高成)

Brief History
The College of International Studies was inaugurated in 1992. Its name was changed to be College of International Affairs since 1 August 2018 to further fit its mission: to train M.A. and Ph.D. students interested in international affairs and area studies. The College consists of five graduate institutes, the Graduate Institute of European Studies, the Graduate Institute of Latin American Studies, the Graduate Institute of Japanese Political and Economic Studies, the Graduate Institute of International Affairs and Strategic Studies, and the Graduate Institute of China Studies. All five graduate institutes offer master’s programs. Additionally, the Graduate Institute of European Studies and the Graduate Institute of International Affairs and Strategic Studies offer doctoral programs. The College also has the Master’s Program in Taiwan and Asia-Pacific Studies (English-instructed) and the Department of Diplomacy and International Relations (English-instructed). Both are English-instructed programs with the aim to advance the College’s internationalization. No other university in Taiwan offers as extensive a range of graduate programs in area studies as Tamkang University does.

All graduate institutes in the College are characterized by their interdisciplinary approaches to scholarly studies. This is reflected in the fact that many of our students come from quite diverse undergraduate backgrounds. In addition, the College encourages its students to take courses at renowned overseas institutions of higher learning, either as exchange students or as students pursuing dual degrees.

The College takes pride in its about forty outstanding faculty members and is privileged to have distinguished diplomats and former cabinet members in its staff. The College has an ongoing commitment to ensuring excellence in both teaching and research. As part of this commitment, the College publishes a quarterly journal, the Tamkang Journal of International Affairs. Many of its contributors are foreign scholars. The College also regularly publishes conference papers and books both in Chinese and English, depending on the venue. The time-honored European Documentation Centre has been highly instrumental in strengthening the academic resources of the Graduate Institute of European Studies.

Mottos and Goals
Our mottos and goals are as follows: nurturing the distinguishing strengths of the College; providing an excellent academic program to local and international students; and co-shaping the national security, defense, mainland China affairs and foreign policies of Taiwan.

Future Development
The College will continue to encourage its faculty to advance their academic achievements and expertise. It will further strengthen its internationalization by expanding academic cooperation with international and mainland China’s academic institutes, by increasing dual-degree partnerships for its graduate and undergraduate students, by providing more English-instructed courses and by enrolling more international students. The College will also enhance its practical cooperation with governmental and private corporations to provide more intern training and job opportunities for its students.

Course Descriptions
A1092 International Communication (0/2): This course introduces the major concepts and theories of international communication. It will also discuss current international affairs from the perspective of international communication.

T0109 International Law (2/0): International law includes basic rules in the international community. This course provides students with basic knowledge of international law. This course aims at strengthening students’ ability to analyze, judge and deal with international affairs.

T8019 The United Nations and International Organizations (2/0): The course studies international organizations and, the United Nations (UN), in history, theory, and practice. Topics discussed include such issues as the failed experiment of the League of Nations, UN system of collective security, the principles and structure of the UN, UN activities in the areas of peaceful settlement of disputes, UN
roles in disarmaments and arms control, and the assessment of UN peace operations.

T0531 Global Management (0/2): This course focuses on newspaper articles about M&A, innovation, and industry. It discusses particular case studies and applies analysis methods used in management to solve related problems.

T0537 Development of Globalization (0/3): This course helps students understanding the origins of, the current situation and the future development of globalization through readings, discussions, and written and oral reports.

T0538 International English News Analysis (2/0): Because the rise of China is one of the most important trends in international politics over the past two decades, the “English News Analysis” will focus on topics involving international security in East Asia. Reading materials for this course include research reports from various think tanks. Students are expected to finish their reading assignments before coming to class. The course does not involve mid-term exams, final exams, or term papers, but there will be a number of open-book quizzes. Students are evaluated on the basis of quiz performances and class participation.

B0220 Principles & Practice of International Trade (2/0): The purpose of this course is to introduce basic knowledge of the International Trade Theory and Policy. In the first half-semester, we discuss the evolution of the theory. In the second half-semester we shall introduce the International Trade Policy and the impact, e.g. tariff and non-tariff barriers to trade.

B0200 International Private Law (0/2): This course provides students basic knowledge related to the conflict of laws. It is very important to apply international private law when cross-border private legal issues arise. So as to the protect civil interests of the international community.

T8021 Comparative Government and Politics (0/2): The contents of this course are focused on the institutional design and changes in Britain, France, Germany, USA, Japan, Russia and China. Political operations which lead to different political developments in these countries are also discussed.

B1693 International Finance: Theory and Policy (0/2): This course systematically explores the analytical framework of international financial issues. It includes the international foreign exchange system, foreign exchange policy, international payments and foreign exchange trading, etc. Through theoretical and case studies and the mutual certification of empirical data, this course intends to improve students’ analytical capabilities in international financial affairs.

I0226 Selected Readings of Chinese and Western Strategic Classics (2/0): The main purpose of this course is to study the core concepts and theories contained in Chinese and Western strategic classics. It shall offer optimal solutions to current strategic issues and inspiration to current strategic thought through the process of creative transformation of the former.

I0227 International Business Management (2/0): The objective of this course is to provide a foundation in International Business Management and help students understand the current international business development and business model.

I0228 The Changing, Development and Prospects of ASEAN Organizations (3/0): This course will begin by highlighting the significance of ASEAN and by providing some background on Southeast Asia and on the ten member states and big powers in the region. It will examine the reasons leading to ASEAN’s establishment 50 years ago, and look at the present and possible future of ASEAN.

I0229 The Political Development and Diplomacy of Southeast Asia (0/3): ASEAN has moved toward strengthening its capacity to tackle regional issues. This course will raise some important issues concerning ASEAN, such as RCEP and US - ASEAN summits, among other things. Southeast Asian participants in the regional organizations also represent growing voices of civil society in regional affairs.

Big Data Analytics (0/2): Big Data Analytics are an exciting new area that combines scientific inquiry, statistical knowledge, substantive expertise, and computer programming. This course will
introduce the fundamental concepts and techniques of Big Data Analytics. The objective of the course is to familiarize students with big data analysis as a tool for addressing substantive research questions. In addition, real-world cases are also used to explore the practical skills concerning a broad range of topics related to the extraction, analysis, exploitation and management of information from big data.
GRADUATE INSTITUTE OF LATIN AMERICAN STUDIES

Degrees Offered: M.A.

Director: Kung, Kwo-wei (宮國威)

The Institute

Founded in August 1989, the Graduate Institute of Latin American Studies at Tamkang University is the first and the only academic research center in the field of Latin American studies in Taiwan. The Institute is devoted to the training of professionals and scholars, also playing an important role in promoting Taiwan's research into Latin American affairs. During the brief period 2009 to 2016, the Latin American Institute and the Institute of American Studies were merged to form the Graduate Institute of the Americas. It has since reverted to the Graduate Institute of Latin America Studies.

Under the incumbent director Dr. Kwo-wei Kung, the Institute provides our MA students with intensive and varied courses in the field of Latin American Studies, including Latin American history, philosophy, politics, international relations, economics, social issues, as well as training in diplomatic and trade affairs.

Faculty

Professor
Francisco Luis Pérez (白方濟); Chen, Hsiao-chuan (陳小雀)

Associate Professors
Wang, Hsiu-chi (王秀琦); Kung, Kwo-wei (宮國威)

Professor Emeritus
Juan Hung Hui (熊建成)

Assistant Professor
Huang, Fu-Chuan (黃富娟)

Degree Requirements

Requirements for a Master’s degree in Social Sciences:
Completion of 32 credits of courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

T1419 Latin American Political System (0/3): This course studies the political system of Latin American countries, including their unique political culture, the theory construction of their governments, and the most important factors in their political development. Finally, we will examine case studies of the political systems in Mexico, Costa Rica, Chile, Brazil, Argentina and Venezuela.

T2829 Spanish News Writing and Editing (0/2): An introduction to writing and editing news in Spanish, and to the language of politics, economics, and social issues. It aims both to familiarize the student with the language of Spanish and Latin American media and with the present reality of Spain and Latin America, in order to understand, write, and edit texts about Taiwan and Latin America in Spanish.

T0601 Analysis of Present Latin American Societies (0/3): This subject undertakes a sociological study of contemporary Latin America. It reviews the main sociological groups and events in today’s Latin America. The course starts with a theoretical introduction to society and to the main sociological theories in Latin America. It studies the topics of social structure, main social groups, landowners and businessmen, politicians, military, the middle class, the Church, trade unions and labor movements, marginal groups, women, children, violence, social safety, organized crime, civic society, migration, education, etc.
T2498 The Environment of Business Management in Latin America (0/2): This course will help students understand research methods from the business management environment; introduce the business management environment in Latin America; discuss the business management environment of specific sectors and countries in Latin America; examine the main economic partners of Taiwan in the region; compare SME development and situations in L.A. with Taiwan; practice Spanish for trade, investment and business purposes.

T2830 Economic Policy, Trade and Regional Integration in Latin America (3/0): This course is a general review about the socioeconomic and political history of Cuba, with its principal manifestations. This study will approach the topic starting from the first inhabitants up to the victory of the revolution, through to the independence wars, the anti-dictatorial fights and national thinking. Given the nature and parameters of this program, students may be able to pursue further research on topics of interest. Some support materials, such as the bibliography will be available for all the students in SEDUCA link of the UAEM web page.

T8025 Latin American Development Theories and Institutional Analysis (3/0): This course introduces how countries in Latin America: (1) select economic development strategies based on different international environment and background; (2) interact with their major trade partners; (3) transform their structure of foreign trade; (4) face the difficulties of regional economic integration and the future.

T8027 Introduction to Research Methods (1/0): This course introduces research methodologies with the aim of developing students’ skills at engaging in academic research. In addition to discussing the formalities and theories of research, each student will develop a personal research project, which will be discussed in class.

A0951 Latin American Foreign Policy and International Relations (3/0): This course presents basic theories of international relations and studies of Latin American countries’ foreign policies, especially with regards to the US. Course content includes examining the special interests of the United States in the region, as well as the diplomatic relations among Latin American countries. In the course we will analyze the decision-making system of these countries and deal with the role of Latin American countries in the international community post-20th century. The present situation and some important topics regarding Latin America will also be discussed.

T8026 Industrial Policy and State Capacity in Latin America (0/3): This course is a general review of the socioeconomic and political history of Cuba, with its principal manifestations. The course will approach the topic starting from the first inhabitants up to the victory of the revolution, through to the independence wars, the anti-dictatorial fights and national thinking. Given the nature and parameters of this program, students may be able to pursue further research on topics of interest. Some support materials, such as the bibliography will be available for all the students in SEDUCA link of the UAEM web page.

T8028 Taiwan, China and Latin America Trilateral Economic and Trade Interaction (0/3): In order for students to form a general picture of the evolution of relations between China and Latin America, this course will first analyze the elements that have accelerated relations between the two entities. The course also considers the structure of foreign policy and strategies that China utilizes vis-a-vis Latin America. The course concludes with a consideration of competing cross strait foreign relations with Latin America.

T2348 Studies on Latin American Indigenism (0/2): This course introduces the major theories and movements of Indigenism in current Latin America, and compares the difference between indigenism and indianism.
GRADUATE INSTITUTE OF EUROPEAN STUDIES

Degrees Offered: M.A., Ph.D.

Director: Cho, Chung-hung (卓忠宏)

The Department

The Graduate Institute of European Studies, established in 1971, is the only one interdisciplinary research institute for European studies in Taiwan. Due to the restructuring of the College of International Studies in 2009, the Graduate Institute of European Studies and the Graduate Institute of Russian and Slavic Studies was integrated into the Graduate Institute of European Studies. The Graduate Institute of European Studies is divided into 2 sections: EU Studies and Russian Studies.

The Ph.D. Program was established in 2000. Therefore, the Graduate Institute of European Studies has become the only one interdisciplinary research institute for European studies in the Asia-Pacific area.

The EU Center in Taiwan (EUTW) was set up in 2009. Tamkang University is one of the consortium universities of the EUTW. The Graduate Institute of European Studies is in charge of the activities of the EUTW and contributes to promoting the EU knowledge.

Faculty

Professors
Kuo, Chiu-ching (郭秋慶); Li-Jiuan Chen-Rabich, LL.M (陳麗娟);
Cho, Chung-hung (卓忠宏)

Associate Professors
Yuan, Renee Yi-mond (苑倚曼); Chang, Fu-chang (張福昌); Tsui, Lin (崔琳)

Assistant Professors
Hsu, Jing-yun (許菁芸)

Degree Requirements

1. The Institute of European Studies offers a Master’s degree in Social Science.
   Requirements for a Master’s degree in Social Science:
   Students must complete 32 credits of university courses. They are also required to pass the review of thesis proposal, submit a written master’s thesis completed under the supervision of a faculty member, and pass an oral examination.

2. The Institute of European Studies offers a Ph.D. degree in Social Science.
   Requirements for a Ph.D. degree in Social Science:
   Students must complete 27 credits of courses. They are also required to have an intermediate-level proficiency of a European language, publish or present at least one research paper in academic journals or international conferences, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Master’s Program

T0547 EU and Its Rural, Agricultural & Environmental Policy (3/0): To know the history and function of the Common Agricultural Policy (CAP) in European Union. And to understand the role and influence of CAP in European Union and world trade.

T1764 The Methodology of European Social Science (3/0): This seminar will introduce the methodologies used in social science research, especially that dealing with EU research.

T2683 The EU’s Soft Power (3/0): This course provides a survey and analysis of EU’s soft power and its impact on the EU foreign policies. It presents different theoretical perspectives and case studies to
engender an appreciation of the complexity of the EU’s external relations. Included are not only the evolution of the EU integration model, but also contemporary issues of foreign economic policy, environmental security, and multilateral cooperation for the management of globalization.

T2820 Jean Monnet Chair European Integration and EU Law (3/0): The course aims at widening students’ understandings of the EU. The course discusses important events and characteristics, such as the fact that the Treaty of Lisbon was enacted January 12, 2009, the EU has fundamentally changed and become a supranational organization with legal personality, with the EU is a quasi-state.

T2846 Political System of the EU (3/0): The purpose of this course is to introduce the procedure of the EU’s political institution. Through analyzing the development process, decision-making, policy instruments and specific institutions of the EU, students will understand the procedure of decision-making and the role of specific institutions of the EU.

T8058 UK, France and Germany and International Relations (3/0): This course will discuss the position of the United Kingdom, France, Germany and Spain in the international community, how they play their international role, and how they work in the Atlantic Alliance. This is the key to the understanding of the international situation in Europe today.

T8084 Jean Monnet Chair EU Economic System (3/0): The European Internal Market has become one of the most important trade markets in the world. The EU is also one of the members of the WTO. This course considers the WTO, customs union, common commercial policy, trade and foreign direct investment, trade of services, among other topics.

T2303 Common Foreign and Security Policy of the EU (0/3): The purpose of this course is to introduce the EU Common Foreign and Security Policy and Common Security and Defense Policy. Through analyzing the development process, decision-making process, policy instruments and institutions of the CFSP and CSDP, the students will obtain a broad understanding of the functions and operation of the CFSP and CSDP.

T2849 Jean Monnet Chair European Integration and European Single Market (0/3): The European Internal Market has become one of the most important trade markets in the world. The EU is also one of the members of the WTO. This course considers the WTO, customs union, common commercial policy, trade and foreign direct investment, trade of services, among other topics.

T2867 Study of EU Cultural Tourism Developments (0/3): An introduction to the origin and evolution of tourism in the World and particularly in Europe. Analysis of the consequences of Tourism industry development and needs or threats occurred in different areas. EU tourism and environment policies with submitted projects and allocated budgets in member states.

T2901 Jean Monnet Chair EU Economic System (0/3): The European Internal Market has become one of the most important trade market in the world. The EU is also one of the members of the WTO. This course discusses the WTO, customs union, common commercial policy, trade and foreign direct investment, trade of services, among other topics.

T0552 European Thoughts and Integration (0/3): The process of European Integration was based on ideas deriving from Western political philosophies. Moreover, attempts have been made to solve the problems faced by Europe by advocates of these western political philosophies. The Graduate Institute of the European Studies focuses on European integration. Therefore, in order to develop students into skilled researchers, students should understand the close relationship between the practical integration and these political thoughts.

T2854 Russian National Security Perspective: Past, Present, and Future (3/0): This course explores the consequences of the elimination of the ideological national security policy of Russia after Cold War, being replaced by more traditional forms of policies. In accordance with research findings, the course allows students to better understand Russia’s security policy and strategic priority and interest using the concepts of National Security, the Military Doctrine of Russia, and Russia's Foreign Policy.

T2856 Social Change in Contemporary Russia (0/2): The purpose of this course is not only to
explore the current situation of Russian civil society, the transition patterns, and the Russian government's policy, but also to help students develop the analytical and research capacity in line with the relevant topics. After two decades of the reform Russia has been changed to a society with more freedom and an economy which has gradually improved in recent years, but it has paid a great price for the transition, and still many problems and consequences are not resolved.

**T2858 Social Change in the Soviet Union (2/0):** Russia had an extraordinary century since 1900. Her transformation has been massive: from autocratic monarchy through communism to an elected president and parliament; from capitalist development through a centrally-owned, planned economy to market reform and so on. From 1917-1911 this period provides us fruitful discussions. In the class we will through papers and movies to understand this social change.

**T8001 Political Transition in Contemporary Central Asia (0/3):** This course looks at the current political landscape of Central Asia. The institutional legacies of both the traditional model of Central Asian societies in the pre-revolutionary period and the political institutions under the Soviet regime continually affect nation building and subsequent development since Central Asian states gained independence. Politics in Central Asia is currently characterized by neopatrimonialism, in which the authoritarian system serves as a formal institution, and behind it an informal, patron-client relationship can be observed.

**T2227 Study of the Commonwealth of Independent States (2/0):** Commonwealth of Independent States (CIS) is a regional organization built in the end of 1991 by the republics of the former Soviet Union. Despite the war in the post-Soviet space and “color revolutions” in some member countries in the past 20 years, internal disputes and compromises are inevitable to promote the its members to search for new forms of integration, such as: The Treaty on the Creation of a Union State of Russia and Belarus, The Collective Security Treaty Organization, The Eurasian Economic Community and the customs union.

**T2225 Globalization and Russia (3/0):** This course discusses the problems of globalization that affect Russia, including the economy, politics, and nationalism.

**T2279 Working on Thesis: Research Methods in Social Sciences (2/0):** The course contains methodological issues, research design, data collection and analysis, and explains how to write academic papers and use of library resources. In order to achieve both methodological and empirical application objectives, this course introduces basic principles of research methods, and through practical examples illustrates possible problems and solutions during the process of research.

**T2510 Russian as an International Language (I) (3/0):** This course offers basic training in the Russian language. At the end of the course, students will be able to read magazine titles and article abstracts.

**Ph.D. Program**

**T1571 Research Method for Social Science (3/0):** The course will attempt to explore the different approaches of international relations. They are realism, neorealism, social constructivism and historical institutionalism etc. Besides, globalization, soft power, economic integration, etc. will also be discussed.

**T2797 Jean Monnet Chair Seminar on the European Integration and European Trade Market (3/0):** The European Internal Market has become one of the most important trade market in the world. The EU is also one of the members of the WTO. This course provides WTO, customs union, common commercial policy, trade and foreign direct investment, trade of services.

**T8068 Economic Globalization and Regionalism in Europe (3/0):** International economy is primary in post-cold war era. It may be the key content in international relations. The course will study the response of UK, France, and Germany to globalization. How does the regime of European market be established and its functions? Besides, the problems of globalization will also be discussed.

**T2843 European Energy Market and International Trade (0/3):** This course discusses energy in the context of international trade and gives an overview of the state of supply of and demand for energy
along with the international framework of energy regulation. With regard to EU law, the focus is on the core of internal market issues in energy and related rules. Energy Charter Treaty can be more effective in addressing such matters specific to energy trade. This course discusses how the interests of both energy-importing and energy-exporting states can be addressed.
GRADUATE INSTITUTE OF JAPANESE POLITICAL AND ECONOMIC STUDIES

Degrees Offered: M.A.

Chair: Tsai, Hsi-hsun (蔡錫勲)

The Institute

The Graduate Institute of Japanese Political and Economic Studies, Tamkang University (GIJPESTU) was established in 2016 to succeed the former Graduate Institute for Japanese Studies, Tamkang University (1983-2009). Drawing on its rich heritage, the Institute is currently focused on expanding its strong knowledge base in Japanese politics and economics to advance the areas of education, research and community services. In the face of rising constitutional conflicts, political regimes, geopolitics, diplomatic relations, environment, food security, international human rights, economics, health, and energy use in the 21st century, a new paradigm is needed to better handle these problems both regionally and globally. The principal goal of the GIJPESTU is to create and maintain just such an academic environment leading to greater knowledge, wisdom, and nurturing of a new paradigm in the sphere of Japanese Studies.

Faculty

Professor
Hu, Ching-shan (胡慶山); Jen, Eau-tin (任耀庭)

Associate Professors
Tsai, Hsi-hsun (蔡錫勲); Naonori Koyama (小山直則)

Assistant Professors
Hsu, Hong-Hsin (徐浤馨)

Professor Emeritus
Hsu, Ching-hsiung (許慶雄)

Degree Requirements
Completion of 32 credits of courses: and students are required to submit a written master’s thesis completed under the supervision of a faculty member and to pass an oral examination.

Course Descriptions

Master’s Program

10231 Japan’s Security Policy (2/0): Japan's security is closely related with the security of Taiwan. Given the importance of this, the course will examine issues dealing with the security of Japan.

10233 The Study of Economic Integration of East Asia and Japan (2/0): Prime Minister Abe’s Strategy of Global Outreach has many innovative approaches to integrate Japan's foreign economic policies, along with measures to absorb overseas economic momentum. Abe’s Strategy of Global Outreach is based on the EPA (Economic Partnership Agreement) strategy. The EPA covers the systematic arrangement of the liberalization of trade, the movement of production factors, cooperation of economic development and so forth. Abe’s Strategy of Global Outreach is not only to develop overseas development potential, but also EPA consultation to open the domestic reform opportunities.

10234 Food Security of Japan and Asia (2/0): The purpose of this course is to introduce basic knowledge of Agriculture Economics, Food Economics and Policy Reforms in Japanese Agro-Food Sectors. In the first semester, we discuss fundamental theory of Agriculture Economics and Food Economics. For the second semester, we discuss Japanese Agriculture, policy response to the new challenges of the resource and environmental issues, food security, multi-functionality.
I0235 Japanese Diplomacy (2/0): This course introduces the evolution and development of Japanese diplomacy in the post-war era. The main topics being covered range from the Japanese “diplomacy” under the rule of GHQ to new diplomacy issues in the twenty-first century. By the end of the course, students are expected to have a systematic understanding of Japanese diplomacy in the post-war era, as well as an ability to think critically, independently and internationally.

I0236 Public Management in the Postmodern State (2/0): This is a capstone course involving a company or organization in Taiwan or Japan providing a practical opportunity to focus on researching realistic business solutions. For students attending the class, students are immersed in an ideal environment for researching and solving real world problems. (Lectures will be held in Japanese)

I0237 Globalization and Japan’s Economy (2/0): This course will cover the contemporary Japanese economy. This course provides foundations of economic theory for understanding the effects of demographic change on the economic growth. The Japanese economy has been in a long stagnation since the 1990s. At the same time, population growth has dropped dramatically, and the population has begun shrinking. These problems will be discussed in class.

T2477 Japanese Strategic Management (2/2): Japanese MBA.


T8078 Comparative Constitutional Law (2/0): For comparison of the constitutional law, the setting of the comparison criteria is essential. To do so, we need to start from the determination of elements that make up the constitutional law. It will change with the times; the difference is also seen by each region. We have to organize the nature of constitutional law, to organize our approach on setting the standard for comparison.

T0885 Japanese Foreign Policy (0/2): This course introduces the evolution and development of Japanese diplomacy in the post-war era. The main topics covered range from the Japanese “diplomacy” under the rule of GHQ to new diplomacy issues in the twenty-first century. By the end of the course, students are expected to have a systematic understanding of Japanese diplomacy in the post-war era, as well as an ability to think critically, independently, and internationally.

T2521 The Strategic Management of Japanese Companies (0/2): Japanese MBA.

T2736 Studies on Japan’s Security (0/2): Japan’s security is closely related with the security of Taiwan. Given the importance of this, the course will examine issues dealing with the security of Japan.

T8004 Postmodern Public Management (0/2): Postmodernism involves a reexamination of the modern state system. In this course, the modern state is examined and its structure is allowed to change, thus providing an opportunity to consider the state as it may appear in the future. The course emphasizes the foundational concept of public management. In addition, theories of new public management, its nature, and its connection to various levels of government activities are approached. Several concrete examples are discussed to provide a full understanding of the ideas surveyed.

T8008 Population Aging and the Japanese Economy (0/2): This course will cover the contemporary Japanese economy. This course provides foundations of economic theory for understanding the effects of demographic change on the economic growth.

T8012 The Study of Japanese Economics (0/2): This course looks at the economics of free trade agreements. In the first half semester, we discuss commodity and service trade, international issues of capital and labor, and agricultural trade. During the second semester the course considers the influence of international systematic integration, especially monetary and financial systems, industrial allocation and technological transformation.

T8014 Food Security of Japan (0/2): The purpose of this course is to introduce basic knowledge of policies dealing with the Japanese Agricultural/Food Sectors. In the semester, we discuss the theory of agricultural policy, Japanese Agriculture, Policy Response to the new challenges. And we shall cover agricultural policy changes under globalization, the economic development and agricultural policies of
Japan, Korea and Taiwan and new strategy of Japanese agriculture development.

**T8076 Economic Growth and Globalization in Japan (0/2):** This course will cover the contemporary Japanese economy. This course provides foundations of economic theory for understanding the effects of demographic change on the economic growth. The Japanese economy has been in a long stagnation since the 1990s. At the same time, population growth has dropped dramatically, and the population has begun shrinking. These problems will be discussed in class.

**T8077 Study on Japan and International Human Rights (0/2):** A well accepted system of human rights is the International Covenant on Civil and Political Rights, or ICCPR. This course provides a close and comprehensive look at the ICCPR, through an examination of its method and practice in Japan.

### Executive Master’s Program

**I0235 Japanese Diplomacy (2/0):** This course introduces the evolution and development of Japanese diplomacy in the post-war era. The main topics being covered range from the Japanese “diplomacy” under the rule of GHQ to new diplomacy issues in the twenty-first century. By the end of the course, students are expected to have a systematic understanding of Japanese diplomacy in the post-war era, as well as an ability to think critically, independently and internationally.

**I0334 Japanese Economy and Income Inequality (2/2):** This course will cover the contemporary Japanese economy. This course provides foundations of economic theory for understanding the effects of demographic change on economic growth.

**I0335 Population Ageing and Economic Growth in Japan (2/2):** This course will cover the contemporary Japanese economy. This course provides foundations of economic theory for understanding the effects of demographic change on economic growth.

**I0336 Japan Security Research (2/2):** Japan's security is closely related with the security of Taiwan; given the importance of this, the course will examine these issues on the security of Japan.

**I0337 Postwar Economic Development of Japan and East Asia (2/0):** The purpose of this course is to introduce basic knowledge of Agriculture Economics, Food Economics and Policy Reforms in Japanese Agro-Food Sectors. In the first semester, we discuss fundamental theory of Agriculture Economics and Food Economics. For the second semester, we discuss Japanese Agriculture, Policy Response to the new challenges of resource and environmental issues, food security, multi-functionality.

**I0338 Economic Integration of Japan and Asian Countries (2/2):** Abe’s Strategy of Global Outreach has a number of innovative approaches to integrate Japan's foreign economic policies and measures to absorb overseas economic momentum. Abe’s Strategy of Global Outreach is based on the EPA (Economic Partnership Agreement) strategy. The EPA covers the systematic arrangement of the liberalization of trade, the movement of production factors, cooperation of economic development and so forth. Abe’s Strategy of Global Outreach is not only to develop overseas development potential, but also through the EPA consultation to open the domestic reform opportunities.

**I0340 Japan's Studies of Politics Diplomacy (2/0):** This course introduces the evolution and development of Japanese diplomacy in the post-war era. The main topics being covered range from the Japanese “diplomacy” under the rule of GHQ to new diplomacy issues in the twenty-first century. By the end of the course, students are expected to have a systematic understanding of Japanese diplomacy in the post-war era, as well as an ability to think critically, independently and internationally.

**T2327 Japan Constitution and International Human Rights Law (2/2):** The International Covenant on Civil and Political Rights (ICCPR) is the foundation of liberty rights in the human rights law. This course is to promote the standard of ICCPR in Taiwan, through examining the ICCPR and the practice and theory in Japan.
GRADUATE INSTITUTE OF CHINA STUDIES

Degree Offered: M.A.

Director: Li, Chi-keung (李志強)

The Department

Fifty years ago, separation prevented the people in Taiwan from taking a close look at the political and economic developments and many other changes in culture, education, laws and regulations in China. Nowadays, Cross-Strait relations have entered a new phase with close personal relationships as well as economic and trade exchanges. It is now the time to conduct comprehensive research on our largest neighbor, China.

These developments prompted the Ministry of Education to dispatch an official request, in August of 1991, to Tamkang University to conduct research on Cross-Strait relations. The Ministry of Education even suggested that a Graduate Institute of China Studies be established to train researchers to undertake in-depth studies of China-related affairs to promote practical solutions and ways to cope with the ever-changing Cross-Strait situation. Since 1999, this institute has also offered a master’s program for extension education.

Faculty

Professors
Guo, Jiann-jong (郭建中)

Associate Professors
Li, Chi-keung (李志強); Chang, Wu-ueh (張五岳); Pan, Hsi-tang (潘錫堂);
Hsu, Tsuo-ming (徐佐銘); Chen, Chien-Fu (陳建甫)

Assistant Professors
Leu, Guan-Yi (呂冠頤); Huang, Jaw-Nian (黃兆年)

Professors Emeritus
Chao, Chun-shan (趙春山)

Degree Requirements
Requirements for a master’s degree in the Graduate Institute of China Studies:
Completion of 32 elective credits of courses. Students are also required to submit a master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Master’s Program

T1032 Politics and Government of Mainland China (2/0): This course involves an introduction to the political system, faction politics & political succession in Mainland China.

I0123 China and World Economy (0/2): This course aims to explore the changing role of China in the global economic system and its impact on international political economy. We will (1) start with an introduction to IPE’s basic logic and core concepts; (2) probe into the development of China’s foreign economic relations, involving the China Model, China’s foreign trade and inbound investments, as well as its financial expansion overseas such as the aid, loans, and investments towards foreign countries; and (3) discuss the consequent impact on world political economy, regional economic integration, and global economic governance.

T0284 A Study on Industrial Economics in Mainland China (2/0): This course provides students with a basis for understanding the functioning of the Chinese agricultural and industrial economy. Built on these foundations, elective subjects covering the most important aspects of the Chinese agricultural and industrial economy are offered for students to select as their areas of concentration for more
specialized study. Topics discussed include policies of industrial development, industrial structure changes, relationship between industrial development and foreign direct investment, introduction of various important industries.

**T1177 Foreign Policy & Diplomatic Relationships of Mainland China (2/0):** An introduction to China’s foreign policy, China’s policy toward the USA, and China’s policy toward the European Union.

**T1620 Particular Research on the Political Economy (2/0):** This course, based on the contemporary political economic theory and traditional Marxist political economy, selects a representative cross-strait interaction in the economic and political aspects for case analysis. Through a mixture of theory case reviews, students explore cross-strait affairs and interaction.

**T1115 A Study on the History of the Chinese Communist Party (2/0):** The course involves extensive studies on the Chinese Communist Party. Emphases are on the historical background of the Chinese Communist Party creation, theoretical basis of revolution, developing process, and issues in analyzing major historical events.

**T0941 A Seminar on US-China-Taiwan Relations (0/2):** This course introduces the important Issues & Topic of the US-China-Taiwan relations, including the political, economic, cultural & military aspects.

**T1315 A Seminar on Mainland China Research and Social Investigation (0/2):** The course introduces social science methodology and theories of the sociology, political science. I wish my students enforcing their independent research capability, when they practice these methods and prospects of the theories on the China Mainland study.

**T0286 Financial Development of China (0/2):** This course provides students with a basis for understanding the functioning of the Chinese financial institutions. Built on these foundations, elective subjects covering the most important aspects of the Chinese financial development are offered for students to select as their areas of concentration for more specialized study. Topics discussed include policies of financial development, financial structure changes, financial risks, monetary policies, inflation, RMB and foreign exchange policies.

**I0284 China Impact: A Political Economy Perspective (2/0):** “China impact” refers to the influences that China’s rise brings to the world. “China impact studies” are especially concerned about how Beijing uses its political and economic power to exert influence on various aspects of society in other countries. This course will explore (1) the background of China impact, (2) the impacts that a rising China has on the world, (3) the impacts that an authoritarian China has in Hong Kong and Taiwan, and (4) the responses that affected nations/societies make to China impact.

**I0207 China’s External Relations in the 21st Century (0/2):** The class introduces the major elements —historical, leadership, institutional, and ideological factors—behind China’s major foreign policy and its pursuit of economic statecraft. It focuses on geographical and thematic issues to analyze how China has reacted to foreign pressure, interacted with the United States and neighboring countries, behaved in international institutions, and managed new emerging issues. This course also takes an interest in bringing different perspectives of international relations to problems facing China’s foreign policy and behavior.

**T2646 Marxism And Socialism With Chinese Characteristics (0/2):** The course introduces Karl Marx’s thought, method and world-view, as well as Marxism after Marx, including the development from Leninism to the system of theories of socialism with Chinese characteristics, the dialogue between Eastern and Western Marxism, the influence of Marxism on contemporary political, economic, social and cultural theories, as well as the challenges of globalization to Marxism and socialism with Chinese characteristics.

**I0178 Institutional Change and Economic Development in China (2/0):** This course provides students with a basis for understanding the functioning of the Chinese economy and economic relations between Taiwan and China. Built on these foundations, elective subjects covering the most important aspects of the Chinese economy and cross strait economic relations are offered for students to select as
their areas of concentration for more specialized study. Topics discussed include the changes of economic system, reforms of institutional arrangements for agriculture, manufacturing industry, foreign direct investment, division of labor between Taiwan and China.

I0283 Regional Security in East Asia and the Rise of China (2/0): This course aims to help students familiarize themselves with East Asian affairs and the dynamics of the Asia-Pacific, to understand the growing importance of bilateral and multilateral relations among East Asian countries to global and regional issues, such as trade, security, development, ideas, and institutions. The course will introduce analytic concepts and theories to comprehend the mechanisms affecting East Asian relations, changes of foreign policy in the US, Japan, China, and Southeast Asian countries, and their perspectives and strategies to regional issues against the backdrop of China’s rise.

I0288 One Belt One Road and New Southbound Policy (2/0): This course discussed the strategies of China's One Belt One Road (OBOR) and Taiwan's New Southbound Policies that contain local and city governance, human capital, infrastructure construction, international aids and debts issues.

I0306 Lectures on Cross-Country Economy & Finance of Global Enterprises (2/0): This course was designed to cultivate students to understand the investment environment in China; to understand the economic and industrial development in China; to understand the current situation of Taiwanese enterprises investment in China; to understanding the cooperation and competition in trade and investment between Taiwan and China; and to lead students to have a sense of reality in investment and management by the Taiwanese and Chinese enterprises globally. Finally, the course will help students to understand the challenge and threats to international investment.

I0309 Seminar on Cross-Strait Communication (2/0): This course aims to explore the mass communication systems in Taiwan and China as well as the propaganda strategies and interactions across the Strait. Three themes are involved, including (1) fundamental theories of mass communication and international communication, (2) empirical development of the media’s relations with the state, businesses, civil society, and foreign capital in Taiwan and China, and (3) China’s global soft power/sharp power strategies and Taiwan’s response.

I0180 Political and Economic Development of East Asian Countries (0/2): This course introduces students to the evolution of the political and economic development of East Asian states. It will study the theoretical factors of three major aspects: relations with great powers, economic globalization and regionalization, and domestic sociopolitical dynamics, to understand the important changes in major countries in politics and economics since the late 1980s. By understanding the variations of political and economic development in East Asian states, students will consider the prospects and challenges of East Asian integration, and Taiwan’s responses to the changes.

T0383 A Study of Cross-Strait Negotiation (0/2): To introduce the important issues and topics of Cross-Strait, including the political, economic, cultural and military aspects.

I0157 Cross-Strait Multinational Enterprise's Trade and Investment in Practice (0/3): This is a new course of international trade and investment in practice in the cross-strait. The trade practice in the cross-strait includes: (1) how to obtain cross-strait trade and market information, (2) how to deal with the trade orders; (3) how to handle the cash flow in trade and controlling quality and delivery of goods; how to deal with shipping, bank payments and accounts payable processing and (4) cross-strait trade disputes.

I0219 Experts' Empirical Evidence on Cross-Strait Investment (0/2): This course was designed to cultivate students to understand the investment environment in China; to understand the economic and industrial development in China; to understand the current situation of Taiwanese enterprises investment in China; to understanding the cooperation and competition in trade and investment between Taiwan and China; and to lead students to have a sense of reality in investment and management by the Taiwanese and Chinese enterprises globally. Finally, the course will help students to understand the challenge and threats to international investment.

I0208 Issues in Mainland China Political Studies (0/2): This course means to introduce various theories and approaches in China study, and through the actual cases, provide with students with an understanding in the research of mainland China.
Executive Master’s Program

I0300 A Comparative Study of the Asia Pacific Strategy between China and the United States (3/0): After the U.S.A. puts forward the strategy of “Return Asia”, which initiates varieties of situations the Asia-Pacific area. In November 2017, President Trump, spoke on the "Indian-Pacific region strategy" in a speech in Vietnam; Indian-Pacific Strategy includes the Asia-Pacific Strategy. Xi Jinping's regime is to ensure the second islands chain's strategy of sea supremacy. This will make China's "Asia-Pacific strategy" collide with the "Indian-Pacific strategy" of the United States. What will be the impact on the Asia-Pacific region?

I0301 The Impact of the Sino-US Trade War on Taiwanese Enterprises (3/0): This course is designed to explore the negative effects of the trade dispute between the US and China on global trade; the Taiwanese enterprises in China and the internal companies and the entire economy of Taiwan.

T0331 The Research Study of China: Theory & Practice (3/0): This course means to introduce various theories and approaches in China study, and through the actual cases, provide students with an understanding of the research of mainland China.

T0888 The Impact of the Sino-US Trade War on Taiwanese Enterprises (3/0): This course is an introduction to China's policy toward Taiwan, and it's impact on the cross-strait relations.

I0212 China's International Trade and FDI Strategies and Institutional (0/3): China has been influencing the world economy significantly since the implementation of its policy reform in 1979. The changes in China's international strategies remarks its institutional transition from the planning economy to the marketed economy. Accordingly, the course will focus on the effect of its marketization on various dimensions of the economy, including regional development, income distribution, the emerging of private enterprises, the technology performance, foreign direct investment, and others.

I0291 The New Sino-US Economic Relationships (0/3): This course means to introduce the China's policy toward Taiwan, and it's impact on the Cross-Strait relations.

T0973 A Topical Study on Taiwan's Policy toward Mainland China (0/3): This course means to introduce various theories and approaches in China study, and through the actual cases, provide students with an understanding of the research of mainland China.

I0288 One Belt One Road and the New Southbound Policy (0/3): This course discusses the strategies of China's One Belt One Road (OBOR) and Taiwan's New Southbound Policies which contain local and city governance, human capital, infrastructure construction, international aids and debts issues.

T0391 Research Seminar on the Cross-Strait Relationship: Theory and Practice (0/3): Cross-strait relations have changed dramatically since President Ma Ying-jeou took office in May 2008. This class is designed to help students learn the factors that have been affecting the bilateral relations through a mix of theories and practice. It will also help the students understand the negotiations that are under way.
GRADUATE INSTITUTE OF INTERNATIONAL AFFAIRS AND STRATEGIC STUDIES

Degrees Offered: M.A. or M.S.S, Ph.D.

Director: Li, Da-jung (李大中)

The Institute
The Graduate Institute of International Affairs and Strategic Studies was founded in 1982. As the oldest graduate institute dedicated to strategic studies in Taiwan, the Institute is considered one of Taiwan’s most prestigious institutions in this field. The Institute is distinctive among Taiwan’s leading institutes of IR and Strategic Studies for its cross-disciplinary approach, powerful combination of theory and practice, and highly policy-oriented character. The Institute offers MA, Executive MA, and doctoral programs. In addition to IR and Strategic Studies, our main fields of study include Regional Security, National Security and Defense Affairs, as well as Chinese Military and cross-strait relations. The faculty members of the Institute are widely recognized experts in their fields and many have real-world experience in the public sector.

Faculty

Professors
Wang, Kao-cheng (王高成); Wong, Ming-hsien (翁明賢); Ho, Szu-yin (何思因)

Associate Professors
Shih, Cheng-chuan (施正權); Li, Da-jung (李大中);
Huang Alexander Chieh-cheng (黃介正)

Assistant Professors
Chen York W. (陳文政)

Professor Emeritus
Wei, Wou (魏萼)

Degree Requirements

Ph.D. Program
Successful completion of 32 credits of courses. Students have to pass a qualifying examination and publish 2 articles in academic journals with an anonymous review system. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination.

Master’s Program
Successful completion of 32 credits of courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Executive Master’s Program
Successful completion of 33 credits of courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Ph.D. Program
T2879 Decision-making Simulation and Crisis Management (3/0): The purpose of this course has two related contents, first, it analyzes the essence of decision-making processes, decision-making models and approaches. Secondly, it analyzes contents and essences of crisis management, and its research approach and methods, in order to realize the inter-connection between decision-making and
crisis management. Finally, we apply computer simulation of decision-making model to let student understand theoretical and practical dimension of crisis management and decision-making process.

**T2884 Strategic Intelligence and International Relations (3/0):** The major purpose of this course is to assist the student in further understanding the course and development of international relations, through the use of theories and methods of strategic intelligence, especially in enhancing the quality of analysis and prediction of the course of international affairs. The success of strategic intelligence not only has to be built upon the basis of the role of intelligence collection, it also needs to focus on approach of intelligence analysis and perception of information processing.

**T2878 Contemporary Strategic Issues (3/0):** This course is offered to provide graduate students with new and important concepts and thoughts related to future strategic studies, and foreign & defense policy issues in the 21st century. Government documents, journal articles, academic papers, and policy statements are put into categories to guide students to better inquiry in the field.

**I0154 Comparative National Security Strategy and Policy Studies (3/0):** This is an advanced course of national security theories and practice. First of all, the course will provide important international theories regarding national security policy. Secondly, the course explores institution and mechanism of national security policy, including decision-making process and interaction among different national security systems. Finally, from comparative research approach the course will discuss difference in national security strategy and policy among important international powers, regional actors and institutions.

**T0134 The Theory of International Relations (3/0):** This course introduces the theories and structures of international politics and explores important subjects of international relations. Both major theories and important international cases will be discussed.

**T0310 A Disquisition on Strategic Theory (3/0):** This is an advanced course of Chinese and Western strategic theory and practice. The classical strategic theory will be the key research of Chinese strategic theory. Western strategic theories comprise those from the classical to the current, which will be explained through topic research.

**T0418 Seminar on Globalization (3/0):** The seminar will provide a critical learning environment for graduate students to both deepen their interdisciplinary knowledge of “globalization” and think seriously about the ways in which intellectuals engage the Global South through development discourse. Also, students will augment their knowledge of the political, economic, social and cultural issues that faced ex-colonies after independence. Furthermore, students will enhance their capacities for critical thinking and develop sophisticated interpretations of development theories, perspectives, issues and policies.

**T0964 Seminar on the UN and International Security (3/0):** The course studies international organizations in history, theory and practice, in particular the United Nations (UN). We will discuss significant issues such as the failed experiment of the League of Nations, UN system of collective security, the principles and structure of the UN, UN activities in the areas of peaceful settlement of disputes, UN roles in disarmaments and arms control, and the assessment of UN peace operations.

**T2712 Topical Strategic Issues in the 21st Century (3/0):** This course is offered to provide graduate students with new and important concepts and thoughts related to future strategic studies in the 21st century. Government documents, journal articles, academic papers, and policy statements are put into categories to guide students to better inquiry in the field.

**T0316 Non-traditional Security Studies (3/0):** The main objective of this course is to explore the impacts and significance of the changing security environment, focusing on the non-traditional security issues such as terrorism, natural disasters and all other emergencies resulting from the course of climate change.

**I0006 Integration of IR and Strategic Studies (0/3):** While Strategic Studies constitutes a unique system of knowledge, it also has a close connection with International Relations. This course provides an integrated research approach as to develop its uniqueness under the same ceiling of International Relations, or offer some distinct perspectives from Strategic Studies for the students of International
Relations.

I0068 A Disquisition on Strategy of Action (0/3): This is an advanced course of National Power and Strategy of Action. It’ll be conducted in two essential parts as follows: 1) Fundamental theories concepts of national, strategic decision-making, and strategy of action; 2) Case study of strategy of action from the ancient to the contemporary such as Qin’s unification strategy, Prussian unification strategy, China’s strategy of action for the South China sea, and America’s strategy for returning to Asia, etc. In short, this course is trying to make an advanced analysis for strategy of action based on theories and practices.

T0067 Social Science Research Methods (0/3): In this course students are introduced to the basic concepts and techniques that are used in social science research. The course is divided into three sections, which cover social scientific inquiry and research design, quantitative data gathering and analysis, and qualitative data gathering and analysis, respectively. As a result of taking the course, students should be able to: (a) demonstrate their understanding of the basic principles and procedures of research methodology; and (b) critically evaluate both quantitative and qualitative research studies.

T0444 Issues on Chinese Military (0/3): This course aims at analyzing some issues related to Chinese military development from multi- and theoretical perspectives, including civil-military, military and society, defense and economics, military innovation, interpretation on Chinese way of war, nuclear weapon doctrines, and decision making.

T0797 Seminar on Economic System and Policy (0/3): This course covers three general topics: how modern economic thoughts evolved, how economy is embedded in society and politics, and economic institutions. In other words, this course is about the ideas, interests, and institutions behind any economic problem and policy. Basic economics is not required.

Master’s Program

I0226 Selected Readings of Chinese and Western Strategic Classics (2/0): The main purpose of this course is to study the core concept and theory of Chinese and Western strategic classics. It shall offer optimal solutions to current strategic issues and inspiration to current strategic thought through the process of creative transformation of the former.

I0064 Lecture on National Security Strategy (2/0): There are three main parts to the Seminar: 1) Basic national security concepts and theories; 2) The decision-making process of national security strategy of main world powers; 3) The construction of Taiwan’s national security strategy. By means of these three parts in order to enhance participants to realize the process of national security strategy and its outcome.

M0216 American Foreign Policy (3/0): This course is not about the process, specific issues, or areal (country) focus of American Foreign Policy. Rather, it is about how the US designs its foreign policy given the economic constraints the country faces. Therefore, the course is about America's grand strategy. The approach adopted this course is historical and comparative. That is, we can understand American Foreign Policy by understanding the foreign policies of powers similarly situated as the US.

T0119 S.T. of International Politics (2/0): The course covers a number of important issues in the contemporary international relations. Both theoretical and practical aspects will be addressed during discussions of the issues. The course focuses on the study of the Asian-Pacific area, with particular emphasis on the development of Sino-U.S.-Taiwan relations and its influence on the interests of Taiwan. The lecture will be given in English. Reading materials will be assigned. Students are required to write papers and present them during the seminars.

T0134 The Theory of International Relations (3/0): This course introduces the theories and structures of international politics and explores important subjects of international relations. Both major theories and important international cases will be discussed.

T0578 The Basic Research of Strategy (2/0): This course not only asks students to understand the strategic research development and related implications by focusing on major strategic concepts and topics, but also explores the strategic research approaches and methodology, according to the change of
strategic environment and tendency, integrating the disciplines, to be the foundation of future strategic studies.

T0817 Professional English and Writing for International Affairs (3/0): We will be reading newspapers and journal articles of international affairs and relations to learn the specific vocabulary, grammar, and above all, rhetoric. We will analyze texts to raise the awareness of specific structure(s) for formal and academic writing so that students can understand how ideas are organized and put forward in a coherent text. The course is also designed according to themes: 1) US and global economic crises; 2) EU and cultural integration; 3) climate change; 4) cross-strait relation. These are, of course, subject to change should other suggestions arise.

T0911 International Economic Strategies (2/0): This course focuses on research design strategies in the study of major concepts, constructs and theoretical perspectives of International Economic Strategies. In parallel a close examination of its connections with relevant disciplines, including international relations, international economics, and management.

T0934 Contemporary War Theories and Military Conflict (3/0): This course introduces the concepts and context of modern warfare necessary to develop an understanding of contemporary military strategy.

T1102 History of Chinese Strategic Thoughts (3/0): The main purpose of this course is to study the core concept and theory of Chinese strategic thought. It shall offer optimal solutions to current strategic issues and inspiration to current strategic thought through the process of creative transformation of classical Chinese strategic thought.

T2699 Wargaming: Decision and Negotiation Simulation (2/0): Contemporary wargaming, developed by Prussian Army in the mid-19th century, has in fact similar to ancient Chinese military thought more than 2000 years ago. It served not only as useful tools in military planning, policy deliberation as well as understanding of power games in international affairs. The course is designed to lead students into the world of wargaming, including methodology, scenario planning, and gaming practice.

T1633 National Power and Strategic Action (2/0): The ultimate purpose of strategy is action. Strategic action comprises three elements: power, purpose, and environment. There are two focuses of this course are as follows: (1) Exploring the core concept and theoretical framework of national power and strategic action; (2) Shaping national and effective strategic action through the assessment of power, purpose, and environment.

I0051 Comparative Studies on Defense Transformation (0/3): This course is offered to provide graduate students with new and important concepts and thoughts related to future strategic studies in the 21st century. Government documents, journal articles, academic papers, and policy statements are put into categories to guide students to better inquiry in the field. The focus of the course is defense transformations in major powers and various impacts of such changes on the development and practice of military institutions as well as capabilities.

I0069 Advanced Studies of Taiwan’s National Defense (0/3): The purpose of this course is, through small-group workshop, to analyze the critical issues in Taiwan's national defense and to seek for possible solutions.

T0512 International Negotiation and Mediation (0/2): The goal of the course is to provide an understanding of the roles of international negotiation and mediation in conflict resolution. The content of the course is divided into two parts: negotiation and mediation. The former covers the basics of international negotiation with emphasis on theoretical knowledge, such as the impact of power, the role of culture, and the nature of multilateral negotiation. The latter surveys major issues of international mediation with case studies, including the Oslo Accord, the Iran hostage crisis, and third-party intervention in Cambodia and East Timor.

T0816 Understanding Journalistic English (0/3): This course aims to equip students with the skills to read English newspapers and news magazines with ease and in depth. Students will be familiarized with various aspects of a news story, ranging from headlines to its various other constituents. After the basic structures, students will be introduced to various types of news stories and articles, ranging from
political news, diplomatic news, to military news. Editorials and columns will also be included in the readings. To encourage students to learn more on their own, bonus points will be given to those who transcribe taped newscasts.

**T1059 International Political Economy (0/2):** The course covers topics like international production, international trade, international finance, the impact of international economy on countries’ domestic politics, international organizations, multinational corporations, dependency theory, foreign aid, economic statecraft, etc. The course will use an anthology of papers to familiarize students with these topics. A basic understanding of IPE is essential to furthering student’s research on strategies. No background in international economics is required. The instructor will explain the various concepts used in international economics.

**T1136 History of Western Strategic Thoughts (0/3):** This course aims to introduce the western strategic thought and theory from ancient Greek era to modern era. There are two study approaches included as follows: 1) the vertical historical development, where students realize the developed logic and essence of the western strategic thought and theory; 2) the horizontal study of selected strategic writings to inspire current strategic theory. Ultimately speaking, it will cultivate students’ capability of strategic thinking and strategic analysis is the further purpose.

**T1571 Research Methods for Social Science (0/3):** The goal of this course is to provide an understanding of major research approaches and methods of social sciences. Students will be required to complete a research project.

**T2003 Asia-Pacific Security Strategy (0/3):** The course aims to analyze the strategic situation in the Asia Pacific region. It will explore the general strategic situation in the region, the major countries’ regional security strategy, including the United States, China, Japan, Taiwan, North and South Koreas, and ASEAN, and their strategic interactions.

**T2416 Study of Military Politics (0/2):** A study of the involvement of the world’s military forces in domestic politics, government, and policy making. Seminar topics include but are not limited to the followings: a historical perspective on the armed forces; social and international impact of military activities; civil-military relations; mechanisms of civilian control of the military; armed forces as interest groups; military interventions; military government; and military performance in government; CBMs; and MOOTW.

**T2592 Studies on Globalization (0/3):** The main purpose of this course is to analyze different aspects of Globalization development, i.e. political, economic, military, social and cultural dimensions. Besides, it will explore from a security perspective how to understand the implications from traditional and non-traditional security threats toward globalization. First, it will identify the core concepts of globalization, related international relations theories and research approaches. Second, it will analyze different security situations under diversity globalization. Finally, it will integrate a situation including not only theoretical, but also practical outcomes under globalization.

**Executive Master’s Program**

**I0048 Armed Forces and Society (3/0):** This course provides general theoretic groundwork for the analysis of the interaction between Taiwanese armed forces and its society.

**T0117 International Politics Theory (3/0):** This course introduces the theories and structures of international politics and explores important subjects of international relations. Both major theories and important international cases will be discussed.

**T2379 National Security Policy Planning (3/0):** The main theme of this course is to explore how the ROC government’s top-level decision makers of the national security apparatus observe the dynamic situations of national security environment, analyze the factors which affect the core interests of the nation, and design the strategies to tackle the challenges, both domestic and international. Also, the key objective of the course is to train the graduate students to be able to think, analyze, and conduct research on the issues with regard to the national security policy in a strategic way.

**T2710 Power Balance and US-China-Taiwan Relations (3/0):** This course will not emphasize on
specific events in the trilateral relations between US, China, and Taiwan. Instead, it will emphasize on the trilateral relations of the impact of international politics. For example, we will not study the Taiwan Relations Act; rather, we will stress on the US grand strategy of balance of power during the formation of the TRA. Henceforth, the course emphasizes on the rise and decline of great powers and how other countries adjust to the fortune of great powers.

**T2711 Modern Strategy & Military Science (3/0):** Due to strained diplomatic environment, Taiwan’s armed forces have been isolated for decades. The Taiwan military not only has been barred from participating in the joint exercises with counterparts of advanced countries, but also suffered from lacking new military thinking and knowledge due to language barriers. The purpose of this course is to exploit students’ understanding on new technologies, operational doctrines and military thinking. The lecturer will select up-to-date international military publications, providing both English and Chinese materials for discussion in class meetings.

**T0315 Seminar for Management in Defense Affairs (SMDA) (3/0):** This course introduces cross-discipline approaches and special topic research so as to help students better understanding the classification and characteristics of the defense management, which is affected by national security. This course will facilitate studying through a KM platform which will provide knowledge management and community-learning for satisfactory learning of defense management knowledge and practice.

**T1571 Research Methods for Social Science (3/0):** The goal of this course is to provide an understanding of major research approaches and methods of social sciences. Students will be required to complete a research project.

**I0047 PLA Modernization (0/3):** As an emerging great power in the Asia-Pacific region, the People’s Republic of China (PRC) is striving for a strong military that is parallel to its growing influence in international affairs. The course is designed to provide students an overview of defense modernization in the PRC and contemporary development of the People’s Liberation Army (PLA) with a specific focus on Chinese understandings, interpretations, and propositions regarding the revolution in military affairs (RMA).

**T0776 Seminar on Strategic Theory (0/3):** The purposes of this course are to cultivate the students’ strategic concepts and shape their capability of strategic thinking and strategic analysis through specific research on Chinese classical strategic theories and western classical, modern and contemporary strategic theories. Furthermore, the students will be able to make a better combination between strategic essence and their own professionalism. Thus, they will have the unique capability of strategic analysis and strategic judgement.

**T0958 China’s National Security Strategy (0/3):** The course is based on the basic theory of security strategy, research approach and research method. It will clarify the security policies of China under the tradition and non-tradition security environment. Including: National security decision making mechanism and process, international and regional security, including politics, diplomacy, culture and energy. Finally, by understanding the security strategies and policies of China, we will suggest the timely solution of Taiwan.

**I0067 Quantitative Analysis of Political Economy (0/3):** Do numbers speak truth or lie? Living in the modern age, we have to understand numbers. This course introduces how numbers are used in social sciences. It has three parts: how quantitative analysis evolved, how numbers tell stories, and how we should think in terms of numbers. There is no prerequisite for math, or statistics, but the students have to do the reading faithfully.

**T0576 The Security Situation in the Taiwan Strait (0/3):** The goal of the course is to provide students with an understanding of the subject of security and peace in the Taiwan Strait. The contents of the course include the theoretical concept of security, U.S. East Asian security strategy, US-China-Taiwan trilateral relationship, U.S.-Japan Alliance, military modernization of China, the role of the US in the Taiwan Strait crises, and U.S.-Taiwan Security ties.
MATER’S PROGRAM IN TAIWAN AND ASIA-PACIFIC STUDIES, COLLEGE OF INTERNATIONAL AFFAIRS (ENGLISH-TAUGHT PROGRAM)

Degree Offered: M.A.

Director: Kung, Kwo-wei (宮國威)

The Program

Founded in August 2014, this new graduate MA program is under the College of International Studies and administered by the Graduate Institute of Latin American Studies. The program is especially designed for students who wish to study Taiwan and the Asia-Pacific region, using English intensively, while constantly interacting with both Taiwanese and international students.

The Taiwan and Asia-Pacific Studies program offers a wide range of courses to suit the needs of its students. The courses cover such areas as history, political science, international relations, economics, and culture studies. All courses are elective and are taught exclusively in English, while all testing is done in English, as well. The average student should be able to complete these requirements within just two years. Admission to the program, for Taiwanese students, only requires an undergraduate degree, strong English skills, and a dedicated attitude to complete the program.

International students will find the program a natural choice, providing great flexibility as regards research topics, clear and understandable English spoken inside and outside the classroom, and a great environment for learning Mandarin Chinese, local customs, and the Asian way of doing business.

Faculty

Professors
Tai, Wan-chin (戴萬欽); Wang, Kao-cheng (王高成); Chen, I-hsin (陳一新);
Wong, Ming-hsien (翁明賢); Tsay, Ching-lung (蔡青龍)

Associate Professors
David Kleykamp (柯大衛); Li, Chi-keung (李志強); Tsai, Hsi-Hsum (蔡錫勳);
Lin, Juo-yu (林若雩); Lien, Lie (林立)

Degree Requirements
Completion of 24 credits of courses. Students are required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Master’s Program

T2700 Taiwan’s Recent History (2/0): This Course Focuses on The History of Taiwan Since the 17th century, covers the topics of Holland occupation. Cheng Chen-kong’s Reign, rule of Ching Dynasty, cession to Japan, rule of Japan, rule of Kuomintang Government by historical sequence.

T2701 Taiwan Government and Politics (2/0): This Course Focuses on The Political development of Taiwan since 1949, contains political institutions and different politics. To clarify the Taiwan's politics and institutions under five periods governments and its foreign, defense, economic, social and cross-strait policy. The purpose of this course is to provide basic ideas and concepts of Taiwan's recently practice political development and key structures of politics.

T2706 Asia-Pacific Economic Development (2/0): This course studies broad issues in economic development in the Asia-Pacific region with special focus on Southeast Asia. The topics include; (1) concepts, data and measurement of development; (2) globalization and development; (3) aid and development; (4) foreign investment and development; (5) middle income trap; (6) poverty alleviation;
(7) human development.

I0285 US and Asia-Pacific Security Issues (2/0): This course is an introduction to US and Asia-Pacific Policy in the 20th and 21st centuries. The goal of this course is to help students to understand the essence of Realism & Neorealism, Alliance Theory, US Rebalancing Asia Policy, US-China Strategic & Economic Distrust, System Theory and Conventional/Non-Conventional Security Issues. Methodology will be taught during the semester so that students can learn how to write readable term papers.

I0286 U.S. Asia-Pacific Policy under the Trump Administration (2/0): This course is an introduction of Asia-Pacific Policy under the Trump Administration. The goal of this course is to help students to discuss the Asia-Pacific Policy under the Trump Administration from both theoretic and practical perspectives. Methodology will be taught during the semester so that students can learn how to write readable term papers.

T2799 ASEAN Organizations (2/0): Topics on ASEAN include the following: the Association's structure and organization after 1976; intra-ASEAN and extra-ASEAN trade; ASEAN policies; security issues; the growth in membership; the causes and effects of the 1997 Asian financial crisis; the cooperation and tension between member states; the strengths and weaknesses of ASEAN; and current problems faced by the regional organization. The course will end by stressing that at the start of the 21st century ASEAN is in crisis as it faces problems on all fronts -- political, economic, social, and religious.

T8017 Introduction to Thesis Writing in English (2/0): This is an advanced course dealing with the proper writing of scholarly papers and books in English. The course also provides a clear understanding of the overall nature of academic research. All aspects of scholarly writing and publishing are considered including ethics, logic, style, and presentation.

A0228 Japanese Economics (0/2): This course introduces the Japanese economy and management.

T2578 China’s Economic Reforms and Cross-Strait Economic Relations (0/2): This course provides students with a basis for understanding the functioning of the Chinese economy and economic relations between Taiwan and China. Building on these foundations, elective subjects covering the most important aspects of the Chinese economy and cross strait economic relations are offered for students to select as their areas of concentration for more specialized study. Topics discussed include the changes of economic system, reforms of institutional arrangements for agriculture, manufacturing industry, foreign direct investment, division of labor between Taiwan and China.

T2835 Economic Organizations in Asia-Pacific (0/2): This course considers the important structure and operation of economic organizations in the Asia-Pacific region.

I0213 US Policy toward China since WWII (0/2): This course is an introduction of the post-WWII U.S. policy toward China.

I0214 Contemporary Cross-Strait Relations (0/2): This course is an introduction of the Contemporary Cross-Strait Relations.

T2705 Taiwan’s Economy (0/2): This course is a complete survey of the Taiwan economy -- from postwar transformation, trade expansion, emergence of IT sector, and current state, to long term challenges of demography, Mainland relations, health care and ageing, and money politics.

T0134 The Theory of International Relations (0/2): This course introduces the main international relations theories including the realism, neorealism, neoliberal institutionalism, constructivism, globalization and decision-making theories.
Department of Diplomacy and International Relations

Degree Offered: B.A.

Chairman: Cheng, Chin-mo (鄭欽模)

About the Department

All courses in this department are instructed in English. By offering intensive and relevant courses, this department aims to equip students with proficient knowledge and skills on diplomacy, international relations, regional politics, economic development, etc. A friendly international learning environment is especially characterized in this department so that students from all over the world can properly enhance their professional competence together with a global vision of career development. In addition to providing excellent opportunities for the study of international relations, with abundant choices among texts and topics from many periods, this department will train students to apply theories and techniques of international relations to diplomacy. Students will also be able to explore some of the complex interactions between these two disciplines.

Faculty

Professors
Tai, Wan-chin (戴萬欽); Chen, Hsin-chih (陳杏枝); Lin, Juo-yu (林若雩)

Associate Professors
David Kleykamp (柯大衛); Lein, Lie (林立); Cheng, Chin-mo (鄭欽模)

Assistant Professors
Yu, Ya-wen (游雅雯)

Professor Emeritus
Chen, Edward I-hsin (陳一新); Chen, Hurng-yu (陳鴻瑜); Tsay, Ching-lung (蔡青龍)

Degree Requirements

Students have to complete 128 credits including all the required credits.

Course Descriptions

H0134 International Relations (I) (2/0), I0161 International Relations (II) (0/2): This course will help students build up their knowledge about the history of the international society. It will particularly help students understand the major issues facing the contemporary world. Besides, it will help students obtain the basic knowledge about the major theories of international relations.

H0136 Politics (I) (2/0), P0023 Politics (II) (0/2): Politics is chiefly concerned with how best to arrange our collective lives, with particular attention to the necessity for and rights and obligations of “rule,” as well as the limits of that important power. Since the time of Socrates, political philosophers have examined and suggested the most defensible approaches to political knowledge as well as the cultural values, political regimes, institutional forms, laws and economic systems that best facilitate “the good life” for human beings.

H1638 Principles of Economics (I) (2/0), H1639 Principles of Economics (II) (0/2): The course will provide students with a sound knowledge of and an ability to apply the key principles of economics to every day events. Within this course, students will look at both microeconomics and macroeconomics.

T2353 An Introduction to Globalization (2/0): Globalization in this course will be defined as a set of economic, social, technological, political and cultural structures and processes arising from the changing character of the production, consumption and trade of goods and assets that comprise the base of the international political economy.

M0061 Seminar on Foreign Policy Analytics (0/2): Understanding Foreign Policy Decision Making
presents a psychological approach to foreign policy decision making. This approach focuses on the decision process, dynamics, and outcome.

**M0310 Statistics I (2/0):** This course introduces the basic concepts of random variables, probability, probability densities, mean, variance, covariance, correlation, sample mean, sample variance, etc. It then looks at the Central Limit Theorem and studies the testing of simple hypotheses. Related open source software will be discussed, as well.

**M0311 Statistics II (0/2):** This course considers the problem of simple and multivariate regression, tests of significance, various types of ANOVA tests, surveys, and the limitations of descriptive and inferential statistics in everyday life. Related open source software will be discussed, as well.

**B0130 Intermediate Microeconomics (2/0):** This course begins with an introduction to supply and demand and the basic forces that determine an equilibrium in a market economy. Next, it introduces a framework for learning about consumer behavior and analyzing consumer decisions. It then considers the theory of the firm under different types of competitive structures. The labor market is discussed separately.

**B0373 Intermediate Macroeconomics (0/2):** This course considers aggregate economic behavior including the determination of the national income, employment, inflation, interest rates, and growth. It also considers foreign trade, the balance of payments, and exchange rates.

**I0163 Political Economy (I) (2/0), I0164 Political Economy (II) (0/2):** Political economy occurs whenever the production and allocation of goods and services is accomplished by non-market forces, such as through collective political action. This course considers such collective action and analyzes the forces that influence political decisions on such production and allocation decisions. In addition, comparisons can be made between countries on how such collective action is undertaken.

**I0165 History of R.O.C. Diplomacy (2/0):** This course focuses on the diplomatic history of the ROC from 1912 to recent years. But it shall concentrate on diplomatic situations after 1949 when the ROC government moved to Taiwan. The ensuing topics shall include Taiwan's international status after the Korean war and San Francisco Peace Conference, withdrew from the UN, interruption of diplomacy with the USA and other major powers, and adopting pragmatic foreign policy, southward policy in 1993.

**I0166 History of Western Diplomacy (0/2):** This course provides instruction in diplomatic law and overviews the range of diplomatic and consular agents practicing diplomacy. Specific objectives include distilling the practical meanings and activities within this specialized chapter of Public International Law - Diplomatic Law - in a lucid, succinct and effective manner.

**I0167 Public International Law (I) (2/0), I0168 Public International Law (II) (0/2):** This course provides an introduction to international law broadly defined. It introduces the basic concepts that every lawyer should know about the international dimensions of law in the modern world, and offers a rigorous foundation for advanced courses in this field.

**P0064 International Political Economy (I) (2/0), P0065 International Political Economy (II) (0/2):** International political economy refers to the mechanisms governing the economic relations between nations. This course first considers the basic theory of economic interaction between countries using trade, capital flows, and the balance of payments. It then turns to a survey of the various governmental interactions between major countries and regions of the world, including trade treaties and FTAs. International economic organizations are also thoroughly discussed.

**I0205 Making of Foreign Policy (2/0):** This course offers a discussion on the differences between foreign policy options, decisions, behaviors, and outcomes together with the differences between individual, state, and system levels of decision making analysis. Therefore, it helps students to identify the problems inherent in foreign policy making and to place themselves in the shoes of decision makers.

**T0123 International Organizations (2/0):** This course provides students with basic understanding of international organizations. We will start with an introduction to the theories and practices of global governance. The course then explores the roles of various international organizations, including IGOs,
NGOs, and regional organizations, in global governance. Finally, there will be a discussion of various issues that international organizations work to address in a highly integrated world, ranging from security, economics, human rights, to the environment.

I0169 United Nations (0/2): This course will assess the past, present and future of the United Nations. The first portion of the course will be devoted to looking at the big picture of what the UN has done in the past, what the UN is doing now, and where the UN is going. The primary purpose of this part of the course is to establish a firm foundation of how the UN works and to become fully versed in the intricate bureaucracy.

T1433 Research Methods (I) (2/0), T1111 Research Methods (II) (0/2): The goal of this course is to provide an understanding of major research approaches and methods of social sciences. Students will be required to complete a research project. This course focuses on both qualitative and quantitative methods, by which we mean the application of historical and statistical methods to problems in political science and international relations. The goal of this course is to teach students to understand and to confidently apply a variety of research methods and research designs that are essential for political science and diplomacy research.

H0142 International Security (2/0): This course involves decisions about priorities. These decisions require an understanding of trends and emerging issues in order to make forecasts about the future. The direction of a society can equally be influenced by a number of disrupters. You will learn to use futures methods in your analysis of international security to make forecasts of your own.

T2118 Selected Readings in International Relations (0/2): This course encompasses historical backgrounds and samplings of the great masterpieces of international relations in the Western World.

T0129 International Etiquette (0/2): This course will provide students with an understanding of the major theories in diplomacy & international relations and to equip students with practical skills and help them become outstanding members of the diplomatic and international relations community.

H0073 Cross-Taiwan Strait Relations (2/0): The goal of the course is to provide students with an understanding of different Taiwan Strait issue. The contents of this course include the theoretical concept of security, U.S. East Asian security strategy, US-China-Taiwan trilateral relationship, U.S.-Japan Alliance, military modernization of China, the role of the US in the Taiwan Strait crises, and U.S.-Taiwan Security ties.

I0200 US–Sino Relations (0/2): This course aims to introduce students with the basic dynamics of strategic thinking and policy-making on both sides, to give an overview of the history of US-China relations, and to discuss a number of key contemporary issues in the relationship in some detail.

A0122 Diplomatic History of Modern China (0/2): This course focuses on the diplomatic history of modern China from the late Ching Dynasty (1840) to recent years. But it will skip over the stage of 1912-1949 during the nation-building of the ROC. The diplomatic relations of the PRC will be included as an important topic for this course. The following topics will include one-side orientation to Soviet Russia, revolutionary diplomacy during great cultural revolution in the 1960s, join the UN, the development of nation-to-nation diplomacy, join ASEAN's dialogue partner and policy toward the South China Sea.

M0216 American Foreign Policy (2/0): This module offers an introduction to the role played by the US in supporting the capitalist mode of production around the globe. It then gives students a clear understanding of the major debates surrounding US foreign policy.

I0199 Foreign Policy of Mainland China (0/2): The course describes the major elements of Chinese foreign policy today, in the context of their development since 1949. Help students to understand the security-based rationale of policy as well as other factors—organizational, cultural, perceptual, and so on—that influence Chinese foreign policy.

I0198 Foreign Policy of Russia (2/0): The aim of this course is to provide students with a basic understanding of Russian foreign policy in the period since the breakup of the Soviet Union in 1991. Students should be able to place Russian foreign policy within its historical, political, economic, and geostrategic contexts. Major themes of Russian foreign policy as well as domestic debates over them.
will be discussed.

**10196 Comparative Politics (I) (2/0), 10197 Comparative Politics (II) (0/2):** This course provides the analytical knowledge and practical skills to understand comparative politics worldwide. It's the study and practice of comparing different political units and systems, either in whole or in part. It concerns the different systems and implementations of the United States and other states as well.

**B0295 Economic Development (0/2):** This course considers the measurement of economic wellbeing, the distribution of income and wealth, as well as the factors that lead to economic development including labor growth, the growth of physical capital, technological progress, the creation of good institutions, education, health and other related factors.

**A1092 International Communication (2/0):** This course offers an examination of the critical role that communication plays in international political and business relations. Software and hardware technologies which form international messages and channels will be discussed.

**M0233 American Government and Politics (2/0):** This course explores the structure and dynamics of American federal government, providing a broad-based introduction to the ideas and institutions that shape politics in the contemporary United States.

**A0393 Latin American Current Situation (0/2):** This course goes in search of an answer resolved in historical, geographical, political, economic, social, and cultural terms. Students will find Latin America in changing frontiers, colonial conquest, indigenous resistance, community structures, family dynamics, social hierarchies, slavery, independence movements, neo-colonialism, nation building, problems of race, political processes, dictatorship, and revolutionary change.

**I0273 EU Development (2/0):** The European Union is the world most innovative international organization with considerable impact in international relations. It is a sui generis organization with a distinct development path that shall be analyzed empirically and theoretically in this course. Next to EUs politics and policies, also relations with the external environment of EU receive attention. The multiple crises the EU has faced and Brexit as well as its role will be discussed as well.

**T1011 Government and Politics of Russia (0/2):** This course offers the comprehensive introduction of institutional construction of Russian government and the way it operates.

**10274 Political and Economic Development of North Eastern Asia (2/0):** The rapid rise of North East Asia is one of the two or three most critical events of the last fifty years. This course aims to discuss those critical questions including what prospects third world countries have in a competitive world economy; what sorts of policies can most effectively promote growth in third world countries; what led to the breaking up of command socialism and what policies to recommend in the transition away from command socialism.

**10277 Government and Politics of Japan (0/2):** The purpose of this course is to investigate the parliamentary cabinet system, the modern state administrative organs and administrative checks and balances on the legislative, judicial independence, constitution and local self-government, political parties and the type of democratic elections, etc.

**10278 ASEAN Development (0/2):** This course provides an overview of political, economic and societal development in Southeast Asia including complex interplay of public policy, global competition, and domestic political & economic relationships in different Southeast Asian countries.

**12075 Government and Political Development of China (2/0):** This course provides a general introduction to key aspects of Chinese government and domestic policy based on historical and conceptual perspectives. The course materials will mainly focus on the post-Mao reforms and development since 1978, against the backdrop of historical and political legacies prior to or after 1949. The course texts will be integrated with academic journal readings, videos, and images to enrich students’ understanding of political and socioeconomic development in Mainland China. This class will emphasize important topics such as analytical concepts studying Chinese politics, transformation of political and policy-making structures, the development and challenges of political and economic reforms, rural-urban differences, the issue of corruption, state-society relations, and the international
consequences of domestic development in Mainland China.

**B1103 Mainland China's Economic Development (0/2):** This course provides students with a basic understanding of China’s economic development. We will start with an overview of the logic of China’s political economy. Then we will explore the roles that various relevant economic actors, i.e. central and local governments, state-owned enterprises, private firms, township and village enterprises, multinational corporations, banks, workers, and consumers play in China’s economic growth. Finally, we will discuss the impacts that China’s economic development on China’s politics, society, environment, and the world.

**I0276 Political System of Taiwan (2/0):** The content of this course includes the introduction to Taiwanese politics and cross-strait relations, Taiwan’s governmental systems from the martial law period to democratization era, nation building and competing national identities, and party politics and electoral politics under democracy.

**I0279 Social Development of Taiwan (0/2):** This course provides an introduction to advanced research and perspectives on Taiwan’s multi-social development which includes homosexuality, Taiwan aboriginal issues, foreign migrant workers, justice of distribution, and so on.

**H0146 Seminar on International Law (2/0):** Traditionally, international law expressed the relationship among sovereign nations. The contents of this course include a combination of written treaties, other written agreements, the traditions of war, and of diplomacy, international law placed some limits on the conduct of nations.

**T0125 International Negotiation (0/2):** This course aims to develop an understanding of the major theoretical approaches in the field of negotiation and how they interplay with political and international relations theories.

**P0030 Energy Politics and Diplomacy (2/0):** Energy and politics are intrinsically interlinked. A state's ability to access energy supplies and the ways it uses energy crucially determine the state of its economy, its national security, and the quality and sustainability of its environment. For energy exporter’s and important energy transit states, energy supply policy is as much a part of the policy arsenal as other economic tools, military power, and diplomatic tactics.

**T2706 Asia Pacific Economic Cooperation (0/2):** This course examines the development of economic integration among countries in the Asia-Pacific Economic Cooperation, the Association of Southeast Asian Nations, and other regional organizations. Taiwan and major emerging market economies in Asia-Pacific region will also be surveyed, along with the challenges and opportunities these countries may face in this globalization era.

**I0294 Seminar on International Politics (2/0):** In the fast changing world with increasing complexity, uncertainty, and volatility, international diplomacy needs to keep up with the pace of change. This course aims to help senior students apply their summative knowledge and skills in international diplomacy in practical cases. Using futures thinking tools and methods, the course seeks to expand students' horizons by extrapolating their long-term vision, challenge their existing assumptions, and consequently develop more holistic and long-term perspectives for international politics.

**I0295 Global Climate Change (2/0):** This is an introductory survey course on the science and policy of climate change, for both non-science majors and introductory science students. The course reflects the most recent science from the latest Intergovernmental Panel on Climate Change reports, and many illustrations include new data and political debate over climate change.

**T1168 Management of International Crises (2/0):** This course is designed to explore the intricacies, challenges, and possibilities of international diplomacy during crises between states or within states in a theoretical and applied manner. The international system has experienced crises which have in the past emanated from the disintegration of the bipolar blocs, from ethnic rivalries, leadership ambitions, power politics, globalization, and economic-strategic interests.
I0296 Taiwan’s Foreign Economic and Trade Relations (2/0): This course is primarily initiated to provide students with a guide to the study of international economics & external trade and an understanding of Taiwan’s foreign economic and trade relations through lectures, discussion, video showing, and selected books. In addition to Taiwan’s foreign economic and trade relations, this course will share the successful story of Taiwan’s Economic & Trade development.

International Disarmament Issues (0/2): This course is to equip students with the conceptual framework and the specific skills needed to be effective and innovative policy makers and administrators in various spheres of governance within governmental, regional, international and multinational institutions through structural course work, internship and research addressing public policy and administration issues in the region.

International Trade and Enterprises (0/2): This course covers the theory and practice of international production and trade, aiming at understanding world trade, international factor movements, trade policy, trade agreements, trade conflicts, and case studies of recent patterns of international trade.

Development of Human Security (0/2): This course will introduce students to a broader, alternative, conception of security, one which concerns not only states and the international system, but also people in their everyday lives. It will examine what the analytical and policy implications would be while looking at contemporary security threats from an individual perspective.
THE CENTER FOR ADVANCED TECHNOLOGY (CAT)

Director: Wong, Ming-hsien (翁明賢)

The Center for Advanced Technology (CAT) was established on August 3, 2010. To fulfill the new market demands of green energy and environmental protection and subsequent changes in international political regulations and national energy, CAT is defined as a bridge for the cooperation between industry and science academy. In a new era of the world, it is essential to integrate cultural, social, and scientific studies into an organic knowledge economy system. CAT will transform the traditional research model, build the linkage of industry, market, and academia, and coordinate different research teams within Tamkang University, to eventually create a new knowledge-based economic value.

THE CENTER FOR JAPAN STUDIES

Director: Hu , Ching-shan (胡慶山)

Although Japan and Taiwan severed official diplomatic relations in 1972, both countries still enjoy frequent and close exchange and interaction, both economically and culturally. However, despite their amicable relationship, Taiwanese have a very limited understanding of Japan and require more experts in the field of Japan Studies. The Center for Japan Studies established in 2010, will not only extend the tradition of excellence in personnel training of Japanese studies, but also will work to generate closer academic relations between Japan and Taiwan.

THE CENTER FOR EUROPEAN UNION STUDIES

Director: Li-Jiuan Chen-Rabich, LL.M (陳麗娟)

For decades, Europe has been the focus of intensive study and research at Tamkang University. Following on the dynamic evolution of European Integration and the increasing influence of the European Union on global governance, the Center for European Studies was established to strengthen academic activities and exchange. The Center has acted in close cooperation with the Graduate Institute of European Studies at TKU and the European Union Centre in Taiwan (EUTW). A major goal of the Center has been to widen the public’s basic knowledge of the EU. The center has developed a strong tradition for its EU lectures and forums, its EU Summer/Winter School Programme, and its annual EU Week activities. The current Director, Prof. Dr. Li-Juan Chen-Rabich, LL.M, was granted the Jean Monnet Chair on European Trade Law from 2015 to 2018. The Center is also in charge of the Jean Monnet Module from 2015 to 2018. The Center for European Studies has been recognized by the EU for its excellent academic work.

THE CENTER FOR ASEAN STUDIES

Director: Lin, Joyce Juo-yu (林若雩)

The ASEAN Studies Center was established on March 15, 2013. It is affiliated with the School of International Affairs at Tamkang University. In response to the government's promotion of the Taiwan’s new southbound policy, it strengthens the cooperative relationship and interaction with the ASEAN and its member states, and combines the research manpower and energy of the school. The Center wants to engage in ASEAN research and related literature, including academic research on diplomatic and security affairs. It will implement relevant government and civil research projects. Industry-university cooperation is carried out in conjunction with industry needs, research and development, and education and cooperation. The center accepts research projects commissioned by external institutions, holds academic international conferences, and provides consulting and training services. It encourages and assists our university staff to undertake and implement relevant research projects. Also, the center handles exchanges with the ASEAN member states and conducts second-track diplomacy and implements the government's promotion of the new southbound policy of the relevant visits, international propaganda, etc.
THE CENTER FOR CROSS-STRAIT RELATIONS STUDIES

Director: Chang, Wu-ueh (張五岳)

The Center for Cross-Strait Relations (CCR) was established on August 1, 2018. Cross-Strait relationships between the Taiwan and Mainland China are among the most critical issues in today's East Asia. CCR engages in regular and sustained dialogue with officials and scholars on both sides of the Taiwan Strait. Our aim is to enhance understanding between Taiwan and Mainland China through in-depth academic dialogue, regular public and private events, and research projects on Cross-Strait relations.

THE CENTER FOR NEW SOUTHBOUND POLICY AND BELT ROAD INITIATIVE STUDIES

Director: Chen, Chien-Fu (陳建甫)

The Center for New Southbound Policy and Belt Road Initiative Studies (NSPBRI) is a transdisciplinary and academic think tank conducted by International Affairs College, Tamkang University. Visions of NSPBRI are to strengthen the dual- or multi-layers cooperative relationship with the ASEAN, South Asia, New Zealand and Australia in response to the New Southbound Policy (NSP) by the Taiwan government, as well as to evaluate the impact of Belt Road Initiative (BRI) promoted by Mainland China. NSPBRI's missions include executing the research projects commissioned by the government and serving as a think tank toward the NSP strategies of the foreign affairs, investment and trade, education and military department, also assessing the impact of BRI’s infrastructure construction programs on India-Pacific region, and applying research projects and funds of NSP and BRI studies entrusted by external institutions through organizing academic conferences, providing consultation and training services, and assisting faculties to undertake and implement relevant research projects.
COLLEGE OF EDUCATION

Dean: Hui-ling Pan（潘慧玲）

Brief History
The College of Education was founded in 2000 in response to the demands of international academic development and educational reforms. The College is comprised of the following 7 institutes: the Doctoral Program of Educational Leadership and Technology Management, the Department of Educational Technology, the Graduate Institute of Educational Policy and Leadership, the Graduate Institute of Educational Psychology and Counseling, the Graduate Institute of Curriculum and Instruction, the Graduate Institute of Futures Studies, and the Center for Teacher Education.

Missions
1. To generate and transmit knowledge through future-oriented education and forward-looking programs while integrating educational theories with practice.
2. To promote local and global “role-model” education measures and research so as to provide educational administrative institutions as well as primary and secondary educational institutions with guidelines for practice and development.
3. To provide consultation on quality education management, establish partnerships with all-levels of schooling and educational institutions, and enhance the overall capacity of education through research collaboration of university academics.

Values
1. Goodwill: the essence of education is to guide learners to develop the good side of human nature. To accomplish this, educators have to think positively of their learners.
2. Perseverance: educational ideals have never been realized easily. Therefore, educators must be persistent in order to fully realize these ideals.
3. Creativity: In the face of rapid social change and keen competition, educators must pursue creativity in order to lead and contribute.

Future Development
Faced with globalization and international competition, the College will continue its devotion in the following aspects:
1. The enhancement of student capabilities, including professional competencies, employability and global perspectives.
2. The enrichment of faculty capacities, including academic promotion, research grants acquirement, interdisciplinary collaboration, as well as international research and teamwork.
3. The reengineering of organizations, including the repositioning, redesign or merger of departments and programs, as well as the integration of human resources, equipment and facilities to enhance efficiency and effectiveness.

Core Course Descriptions

Master’s Program

D0037 Qualitative Research (3): This course is designed for beginners to acquire fundamental knowledge for conducting qualitative studies in educational settings. It will briefly compare philosophical assumptions regarding different research paradigms. Different approaches to qualitative studies will also be discussed. An emphasis will be placed on each aspect of the research process, namely formation of research problems, data collection techniques, data analysis and interpretation, standards of trustworthiness and research quality, as well as research ethics. Students are expected to learn to write a research proposal and conduct a pilot study in real educational settings.

D0210 Statistic Methods and Application (3): The main purpose of this course is to help students to understand the meaning of statistics in educational research. The content of the course includes the t-Test, one-way ANOVA, ANCOVA, correlation, regression, etc. The course also familiarizes students with the statistics software SPSS. It is expected that through the course, students can apply appropriate statistical methods to solve educational research questions.
D0364 Theory and Application of Emotional Management (3/0): This course aims to familiarize students with theories and applications of emotional management. It covers the psychology of emotions, and strategies and skills related to emotional management, etc.

M0905 Writing Research Papers (0/2): This course is designed for graduate students and focuses on the development of writing skills for academic paper and degree thesis. Students will learn how to identify proper research questions for a study, organize multiple sources into literature review, and write scholarly/degree paper in proper format.

D0454 Seminar on Exploring the Futures (3/0): This course serves as an introductory course to Futures Studies. It is a joint course with the University of Turku in Finland. Students with or without background knowledge in Futures Studies are welcome. Through basic futures tools, students learn to imagine, examine, explore, and deepen their futures with a long-term perspective, which is a critical skillset in this fast-changing world. The pedagogy seeks to challenge students’ existing assumptions of the society as a whole and consequently develop new and more holistic perspectives for students. It also helps to develop one’s long-term and future-oriented thinking. This is a joint online course with the University of Turku in Finland. Lectures are delivered both through synchronous online instructions from Finland and by the local instructor. In addition, students are encouraged to interact with Finnish students through the joint Moodle platform for an even fuller learning experience.
DOCTORAL PROGRAM OF EDUCATIONAL LEADERSHIP
AND TECHNOLOGY MANAGEMENT

Degrees Offered: Ph.D.

Director: Hui-ling Pan (潘慧玲)

Faculty

Honorary Professors
Flora Chia-I Chang (張家宜); Ying Yang (楊瑩)

Professors
Hui-Ling Pan (潘慧玲); Ching-ji Wu (吳清华); Dian-fu Chang (張錦富);
Hsin-yih Shyu (徐新逸); Shih-chung Lee (李世忠); Ho, Li-an (何俐安);
Chang, Chiuang-sui (張瓊穗); Li-hua Chen (陳麗華); Ya-fung Chang (張雅芳);
Ru-chiie Huang (黃儒傑); David Tawei Ku (顧大維)

Associate Professors
Yi-chia Cheng (鄭宜佳); Chun-yi Shen (沈俊毅); Chia-ling Hsu (徐加玲);
Jui-kuei Chen (陳瑞貴); Shun-jie Ji (紀舜傑)

Degree Requirements

This program provides two to seven years to prepare to satisfy the requirements of the doctoral degree. In the beginning, all the applicants with a master degree should pass the doctoral entrance exam and then enroll in the program. It requires a total of thirty-six credits and at least fifteen credits in the selected major of educational policy and leadership program or technology innovation and management program. Passing the qualifying exam is another important requirement to be a candidate. Fulfilling the qualifying exam may include passing two written exams or publishing two articles in SCI, SSCI, A&HCI, EI, TSSCI, THCI journals. The dissertation is final key requirement in the program. The dissertation should satisfy the requirements of the final oral defense.

Course Descriptions

D0463 Special Topics on Quantitative Methods (3/0): This course offers a broad foundation of knowledge and skills related to statistics and quantitative models. The selected topics will focus on the educational leadership and technology management. Typical statistic models including ANOVA, Factor analysis, Regression analysis, ARIMA, MANOVA, and SEM will be discussed and practiced in class. Some of fuzzy statistics will also be addressed in this course.

D0464 Special Topics on Educational Policy and Leadership (0/3): This course offers students in-depth investigation of the theories on educational policy and leadership. Policy process theories and new perspectives of leadership are covered. It explores current issues and analyzes cases to provoke students’ thinking.

D0465 Special Topics on Innovation and Management of Educational Technology (3/0): Due to the nature of fast developing educational technologies and the complexity in the diffusion process, the implementation of innovation within educational setting often times encounters challenges which may result in failure. This course aims to provide an overview of innovation diffusion process and strategies of change management. In addition, new trends in education will be addressed and discussed. The learners will also have an opportunity to practice the theories and methods learned in class.

D0466 Special Topics on Globalization, Information-oriented education, and Future-oriented Education (0/3): This course focuses on the topics of globalization, information-oriented education, and future-oriented education which are also the University’s “Triple Objectives of Education”
established by the Founder of Tamkang University, Dr. Clement C. P. Chang. This course offers students in-depth investigation of the related theories and practices on these topics which will provide students with cross-disciplinary knowledge and international perspectives.

D0467 Special Topics on Curriculum and Instruction Leadership (0/3): This course provides students in-depth investigation of the theories of curriculum and instruction leadership. The course content includes international perspectives, national policies, trends, and latest issues in curriculum and instruction leadership. Both sharing and discussing are important ways in this course. The students will be asked to prepare and present a special topic focused on this field in class.

D0529 Special Topics on Educational Information Management (3/0): This course offers a broad foundation of knowledge and skills related to educational information management and its application in the implementation of online education. The content of this course includes the application and the effects of educational information management, the combination of different pedagogy (self-regulated learning, problem-based learning, game-based learning, collaborative learning, team-based learning, etc.) with educational information management. The teacher and students in this course will also analyze the problems of teaching and identify the goals teaching and applications in E-learning.

D0530 Special Topics on E-learning (3/0): This course is a graduate level course designed to provide the student with the opportunity to critically explore, examine, evaluate, and experience the design, implementation, and the use of e-learning technologies for education. In this course the theoretical framework, historical development and practical applications of e-Learning movement will be examined.

D0531 Special Topics on Policy and Governance in Higher Education (0/3): This course provides specific topics related to educational policy and governance in higher education. The discussion will focus on the current policy and governance issues in the systems of developed countries. However, the course will also ask the participants to reflect the related issues in Taiwanese higher education system.

D0563 Special Topics on Emerging Educational Technology (0/3): This course provides students in-depth understanding of innovative and emerging educational technologies and their effects on students’ learning. The content of this course includes the applications of information and communication technologies (ICT), ubiquitous learning, mobile learning, flipped classroom, mobile applications (APP), Massive open online courses (MOOCs), educational games, eye tracker, and social networking sites (SNSs) for learning. The potential issues of new educational technologies, and their applications and effects will also be discussed and explored in this course.

D0564 Special Topics on Development in Culture and Educational Industries (3/0): This course is devoted to exploring the development of a wide variety of commercial businesses and nonprofit organizations in cultural and educational industries. Through literature review, field studies and cases analysis, this course will provide students with an in-depth understanding of basic concepts and theories of management, strategic analysis of the management policies in which organizations operate to effective problem solving and decision making, and critical thinking of what actions entrepreneurs take to maximize value creation and social responsibilities.

D5032 Special Topics on Learning Technology and Application (0/3): This course provides students in-depth investigation of the current issues of learning technology and application. The selected topics will focus on the relationship between the core of instructional design and the newest learning technology and applications. Students have to pinpoint the specific issues and have an opportunity to integrate the learning theories and latest technologies in class.

D0573 Special Topics on Higher Education and University Instruction (0/3): This course consists of five components. First, it explores the development and evolution of ideas and the spirit of a university; second, it examines recent development trends and reform directions of higher education in advanced countries; third, it investigates current issues, strategies and perspectives of higher education and university instruction in Taiwan; fourth, it enquires about the impact of the knowledge-based economy on higher education and university instruction; and finally, it describes advances in the overall quality and competitiveness of higher education.

D0588 Special Topics on International and Comparative Education: This course introduces students to the theoretical foundations of comparative and international education, as well as a range of
topics and issues influencing the field. At the end of this course, students should be able to think about their own school or educational system within a global context, and have a solid understanding of how to compare systems internationally.

D0625 Seminar in Theory and Practice on Emerging Technologies (3/0): The course offers a broad foundation of knowledge and skills to prepare students for employment in related research and applications on emerging technologies in education. The content includes international perspectives and national policies in ICT education, trends and latest issues in emerging technologies, including STEM and coding education, Robotics, PBL with multidisciplinary curriculum, game-based learning, AR/VR/VR, AI/IOTs, digital citizenship, digital divide, etc. Students are expected to master the new trends in educational technology and able to conduct relevant research.
DEPARTMENT OF EDUCATIONAL TECHNOLOGY

Degrees Offered: B.Ed., M.Ed.

Chairman: Yi-chia Cheng (鄭宜佳)

The Department

Established in 1997, the Department of Educational Technology focuses on the integration of instructional development, media production with digital processing, and human resources development. The curriculum consists of two major areas: (1) educational theories (including instructional development, human resource development and research methodologies), and (2) applications of current technology (including digital and analogue media productions).

In order to ensure teaching quality and help students acquire hands-on experience in multimedia production, the Department has its own web server, accompanied with two computer laboratories, an audio lab, an IE (Information Experience) Lab, a multimedia lecture room, as well as sufficient hardware and software for digital image processing, animation production, and audio-visual production. The curriculum prepares students for a variety of careers, such as Web-based instructional designers, multimedia producers, and corporate trainers.

Faculty

Professors
Shih-chung Lee (李世忠); Hsin-yih Shyu (徐新逸); Chiung-sui Chang (張瓊穗);
Li-an Ho (何俐安); David Tawei Ku (顧大維)

Associate Professors
Ching-fan Chen (陳慶帆); Chun-yi Shen (沈俊毅); Yi-chia Cheng (鄭宜佳);
Ting-ling Lai (賴婷鈴); Yi-Hsuan Wang (王怡萱)

Assistant Professors
Sen-Huei Tsai (蔡森暉); Chih-Hung Chung (鍾志鴻)

Degree Requirements

1. Requirements for a Bachelor in Educational Technology (B.Ed.): Students must complete at least 128 credits of course work, including university required general education (26 credits) and professional education (73 credits) of Educational Technology. Professional education provided by the Department includes required courses (53 credits) and elective courses (20 credits). These professional courses include educational theories, instructional material design, digital media production, training and evaluation.

2. Requirements for a Master’s degree in Educational Technology (M.Ed.): Students must complete 27 credits of course work, including 15 credits of required courses and 12 credits of elective courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Course Descriptions

Undergraduate Courses

D0368 Introduction to Educational Technology (3/0): This course covers the fundamentals of educational communications media and technology, including characteristics of media, the teaching-learning process, technology evaluation and utilization of media teaching.

A1207 Evaluation of Instruction (0/3): This course introduces concepts and procedures for evaluating the whole instructional process, including instructional design, instructional content, teacher performance, and instructional media. Activities include classroom presentations of self-designed instructional units and various evaluation methods.
A1590 Curriculum Development (0/2): This course presents a systematic process of developing curriculum, including goal setting, objective definition, content analysis, resources allocation, teaching strategies, as well as implementation and evaluation. New trends, such as integrated curriculum and innovative teaching, will be emphasized.

A1605 Introduction to Human Resource Development (3/0): This course covers basic knowledge and skills in HRD. Topics include values and positioning of HRD, roles and responsibilities of HR specialists, and major HRD functions, such as training and development, organizational development, as well as career development.

A1627 Instructional Design (3/0): This course introduces concepts, models, steps, and functions of instructional design. Students are expected to understand the above knowledge and apply them to team projects.

A1635 Educational Testing and Measurement (0/2): This course discusses the principles of sound assessment as well as methods of testing and measurement in education, including critical roles of assessment, varied assessment methods, and assessment applications.

A1719 Needs Analysis (0/3): This course provides models and techniques for conducting needs assessment. Case studies from various contexts will be discussed in the class. Students will also use newly-learned knowledge to work on need assessment projects during the semester.

A1725 Special Project in Educational Technology (0/3): This course introduces current trends and issues in educational technology. Students cooperate with their instructor to produce a series of training sessions and products.

A1997 Adult and Lifelong Education (0/3): The major focus of the course is the concept of individual differences, what they are, and how they affect the learning and teaching of adults.

A2019 Educational Statistics (0/2): This course focuses on statistical methods for acquiring and analyzing research data, emphasizing empirical methods and experimental designs. Basic statistical concepts are a prerequisite to this course.

A2176 Introduction to Performance Technology (3/0): In this course, a systematic process linking business goals and strategies with the workforce responsible for achieving the goals will be introduced. The human performance technology model includes stages such as performance analysis, cause analysis, intervention selection and design, and intervention implementation and change will be explored and discussed in class through various learning activities.

A2178 Organizational Development (0/3): This course presents a process that employs behavioral science knowledge and practices to help organizations achieve greater effectiveness, including increased financial performance and improved quality of work life. Moreover, concepts like change management and knowledge management will also be discussed.

A2277 Graphic Design (0/3): This course provides basic knowledge and skills in the art and science of visual communication for students. The field of graphic design combines the human factor and technology with aesthetics in the production of type graphics, signage, publications, identity systems, packaging, film graphics, posters, computer interface design, and other forms of communication.

A2340 User Interface Design and Development (0/3): In this course, students will apply fundamental principles to design, implement, and evaluate user interfaces for interactive and web-based courseware. Topics will include user and task analysis, low- and high-fidelity prototyping, usability testing methods, iterative design, and research topics such as learning modules, multimedia courseware interfaces, and web learning management systems.

D0044 Digital Image Processing, Production and Application (0/3): This course provides solid concepts of digital processing and utilization skills of Photoshop software. Based on the application of this software, students will learn how to accomplish different tasks, from retouching photographs to websites, and the competence of evaluating digital images.
D0045 Computer Programming (I), Production and Applications (3/0): This course focuses on the basic training of programming language, and writing for the programs of simple computer games, so that students can write programs to implement instructional materials.

D0046 Computer Programming (II), Production and Applications (0/3): This course focuses on the writing applications of database and programs of computer games, such that students can write programs to implement instructional materials.

D0109 E-learning Courseware Development (0/3): This course requires students to develop an e-learning course to solve a training problem. Students will be challenged with various scenarios. Under the constraints, students will have to develop an e-learning product and justify its efficiency and effectiveness.

D0130 Digital Audio Editing and Practice (3/0): This course covers the fundamental elements of audio for digital multimedia production. A large component of the course is the "hands-on" operation of audio production equipment. Experience will be gained in the use of audio equipment and software in the design and production of courseware for e-learning.

D0131 Organizational Psychology (0/3): This course focuses on issues related to organizational behavior, leadership, and development; personnel staffing, development, and well-being; and organizational culture and change. Students can apply what they learn in this course to the workplace. And organizational psychologists can contribute to an organization’s success by improving the performance and well-being of its people. Topics in this course also include motivation in the workplace, accommodation, group behavior, team effectiveness, job satisfaction and commitment.

D0139 Digital Video Editing and Practice (3/0): This course provides basic knowledge and skills in digital video editing and video production for students. Through project-based individual/group teamwork, the course allows students to practice techniques of video production, including storyboard creating, nonlinear video editing, and other specialized professional techniques for electronic video materials.

D0141 2D Graphics Design and Animation Production (3/0): This course is concerned with the fundamental context of 2D animation production which includes the basic tools of animation production, the skills of painting, chromatology design, and other theories of 2D graphical design.

D0142 3D Animation Production (0/3): This course introduces software used in 3D animation: 3D Studio Max. Students can learn from this course how to create models and scenes, set the lights and objects of material, key frames of animation, and other fundamental skills in 3D animation production.

D0166 English for Educational Technology (0/3): The purpose of this course is to enhance students’ English ability through engaging in activities designed for the field of educational technology. Students will work individually and cooperatively to practice their reading, writing, speaking, and listening skills on various educational technology topics.

D0167 Design and Practice of Interactive Courseware (3/0): This course reviews basic courseware features, analyzes methodologies for multimedia-based learning, and discusses activities relevant to designing and developing multimedia projects. Students are required to evaluate multimedia courseware and integrate the courseware into a lesson plan.

D0184 Learning Strategies and Techniques (0/3): The purpose of this course is to present the foundation and application of learning strategies and techniques, including psychological theories, learning styles, learning strategies, thinking strategies, and knowledge management. Students will have opportunities to conduct a case study to observe and evaluate participants’ learning strategies and techniques.

D0200 Training Practice in Industry (0/3): This course emphasizes analyzing, designing, developing, implementing, and evaluating training for business and industry.

D0262 Webpage Design and Development (0/3): This course covers webpage design and development using an instructional design model. Specific webpage design principles will also be
covered. Students will create a course website and conduct usability testing during the evaluation phase. Revision of the website based on results of usability testing is required.

**D0297 Rapid E-learning Tools Application and Production (0/3):** This course introduces various multimedia e-learning courseware builders. Students have to understand the characteristic of various software and use them in the most effective situations. Students also have to integrate instructional theories to establish an ideal e-learning course.

**D0298 Basic Training of Digital Content Production (3/0):** This course introduces several multimedia authoring tools. Students are required to master the major functions and use them to accomplish multimedia projects.

**D0299 E-Learning Program Adaption and Management (0/3):** The aim of this course is to help students understand the model and process of e-learning adoption and management. Topics include platform selection plan, course development strategy, project team management, diffusion strategy and project proposal writing. Real cases selected from local companies and educational settings will also be discussed in this course.

**D0300 Digital Education TV Program Production (3/0):** The aim of this course is to help students understand the process of basic TV production, including pre-production, production, and post-production. Students will learn to incorporate lighting, audio, camera movements, camera operation, and picture compositions skills to produce an educational program.

**D0303 Information System, Production and Applications (3/0):** In the course, students not only learn how to implement PHP programs on the Internet, connect PHP programs with my SQL database, but also manage their database systems, and use the mechanism to construct Internet applications systems.

**D0304 Interactive Learning Materials Design (0/3):** The goal of this course is to help students understand Flash and write interactive action scripts. Through the Internet, students will implement dynamic multimedia information systems presented on the Internet.

**D0305 Instructional Principles and Strategies (3/0):** This course explores the basic concepts of instruction, including learning theories, factors of instruction, teaching strategies, evaluation of learning effects, and instructional design. Students learn to apply both theory and practice through group discussions as well as group projects.

**D0331 Digital Audio Editing and Practice (3/0):** This course gives students an opportunity to apply the knowledge, skills and expertise acquired in the course ‘Educational Technology’ to industrial, business or government contexts. During the internship, students will apply academic principles to the solution of practical problems in the various areas of Instructional Technology. The intern is responsible for planning, carrying out, and reporting on projects assigned.

**D0332 Introduction to E-learning (3/0):** The aim of this course is to help students understand basic issues about eLearning development, including methods and applications of advanced technologies, and learning and instructional strategies for eLearning. Topics will cover mobile learning, digital learning and simulation in the context of academic and business training. This course will also provide an overview of important issues required for successful eLearning in different learning settings.

**T0081 Survey Method (3/0):** This course provides a broad overview of identifying research questions, designing research strategies, retrieving and organizing literature, determining research methods, and examining the theory and practice of both quantitative and qualitative research. Students will have opportunities to clarify their own research questions and write research proposals with relevant research designs.

**T0145 Educational Psychology (0/3):** This course describes theories of human developments, learning processes, behavioral changes, and cognitive psychology by introducing several psychologists. Through case studies and class activities, students will learn to observe and analyze educational problems from aspects of individual differentiations, learning motivations and conditions, and knowledge-related factors. They will also learn to provide possible solutions by initiating educational strategies using principles taught in this course.
T0994 Applied Project in Educational Technology (2/2): This course requires students to integrate their educational technology knowledge and skills, follow the process of the ADDIE model, and actually produce a product of professional level in the training area.

D0401 Digital Environments Design for Education (0/3): This course identifies essential design elements of modern, high quality learning environments and includes discussions on facility arrangements; as well as the utilization and evaluation of future technology. Classrooms examined include general purpose classrooms, lecture halls, seminar rooms, computer labs, and specialized classrooms such as distance education and interactive technology classrooms. The course also explores the use of technology in classrooms, discusses a team planning approach to programming for classroom design, offers advice on equipment security and on meeting accessibility regulations, and provides practical applications for surveying classrooms using illustrative checklists.

M1103 Knowledge Management (0/3): This course aims at introducing how organizations adopt knowledge management (KM) through strategic planning and change process to enhance organizational functions and performance. Course content includes: (1) the background and culture of KM, (2) technologies and strategies of KM, and (3) the theory and practice of knowledge services and developments.

D0500 Photography and Visual Identity (2/0): This course provides basic photography knowledge, skills and appreciation of visual identity. Through project-based hand on practice such as focusing, depth of field, golden ratio, and photo essay, the course allows students to master the knowledge and skills of photography and appreciate the various visual design styles and principles.

D0533 Project Management for Educational Technology (0/2): This course aims to equip learners with a theoretical and intellectual foundation of general project management skills, methods, and techniques. It also provides the opportunity for the learners to occupy many roles in educational technology projects within a company or organization; assessing performance goals, developing learning objectives, designing instructional materials, delivering curriculum in classrooms, online or in blended environments, and using new and ever evolving technologies to improve human performance and reduce costs.

D0534 Educational Game Design (0/2): The objective of the course is to introduce some simple computer game programming software to be implemented on different devices. Students will design and develop interactive learning games based on related theories of teaching materials.

D0535 Design and Development of Instructional eBooks (2/0): The primary focus of this course is to develop skills in designing, developing and evaluating instructional eBooks and the use of these materials to enhance the learning environment. Students will complete a number of projects to develop instructional eBooks, while maintaining compliance with the copyright laws. This course uses Apple iBooks Authors and other interactive programming authoring system to design and develop instructional eBooks.

Master’s Program

A1076 Educational Communications and Technology (3/0): This course covers the present, past, and future of educational technology, while helping individual students develop personal understanding of and orientation to the field.

A1121 Learning Psychology (3/0): This course addresses different aspects and processes of how people learn, including behaviorist views, social learning theory, cognitive views, memory, transfer, problem solving, motivation, etc.

A1384 Qualitative Research (0/3): This course is designed to have 18 units divided into three big categories, namely the research process, research methodologies, and research methods. The research process section involves a brief introduction to research design, research ethics, validity and reliability, data collection, data analysis, and report writing. In the research methodology section, topics discussed include theoretical paradigms such as biographies, case studies, action research, phenomenology, ethnography, and grounded theory. In research methods, students learn how to conduct field studies, participant observation, in-depth interviews, focus groups, questionnaires, and content analyses.
A1605 Human Resource Development (3/0): This course covers the entire field of HRD, from orientation and skills training to career development and organizational development. In addition, related concepts, processes, and practices that form the basis of successful HRD will be discussed.

A1606 Diffusion of Educational Innovations (3/0): This course focuses on several aspects regarding the implementation of educational innovations. Models of diffusion of educational innovations will be investigated. Particularly, elements relating to the innovation decision process including knowledge, persuasion, decision, implementation and confirmation stages will be discussed comprehensively. The Concern-Based Adoption Model and change management will also be studied.

A1627 Instructional Systems Design (0/3): In this course, models and theories of instructional design will be introduced and discussed for planning and developing instructional (training) programs. Completion of an ISD project using ISD models is required to ensure that students acquire the knowledge and skills essential to performing procedures of ISD.

A1719 Needs Assessment (3/0): This course is concerned with the theory and practice of needs assessment. Case studies are employed as a learning method. Students also conduct needs assessment projects in groups.

A1785 Educational Statistics (0/3): This course focuses on basic statistical concepts and applications. Important concepts include: population and sample, random sampling, normal distribution, and standard scores; applications include correlation and regression, the idea of hypothesis tests, t-tests, Chi-square tests, and analysis of variance.

A1870 Message and Interface Design (0/3): The goal of this course is to advance students’ message development knowledge and skills of graphics, text, sound and animation. This course also introduces the concepts and technology necessary to design, implement, and evaluate user interfaces.

A1999 Design and Development of Multi Media Web-Based Environments (0/3): This course provides students a basic knowledge of designing and developing web-based multimedia courseware. Aspects of theory include psychology principles and research in multimedia learning. Students will have the opportunity to apply knowledge and skills to design and develop their multimedia courses.

A2018 Web-Based Instruction and Learning (3/0): This course presents an introduction to instructional computing via the World Wide Web. Special emphasis is placed on using the internet and learning “with” technology, as well as using cognitive tools and constructivist learning environments. Literature reviews, e-course evaluations, and e-learning activity designs are major tasks in this course.

A2075 Project Management and Evaluation (0/3): This course examines project organization, planning, and management and provides practical knowledge on managing project scope, schedules and resources. Topics include project life cycles, work breakdown structures and Gantt charts, network diagrams, scheduling techniques, and resource allocation decisions. Concepts are applied through team projects and tutorials using project management software.

A2176 Performance Technology (3/0): This course encompasses the theory and practice of analyzing, designing, implementing, and evaluating instructional and non-instructional solutions for all levels of human learning and performance problems. In this course, students will be able to define the purposes and functions of performance technology, analyze organization’s performance problems and identify their causes, select the most appropriate performance improvement interventions, define the steps and critical components of the implementation plan, and evaluate the effectiveness of performance improvement interventions.

A2211 Distance Education (0/3): This course deals with the fundamental themes of distance instruction, with an emphasis on knowledge relevant to web-based instructional design. Planning, analysis, design, development, implementation, and evaluation of distance instructional systems in an educational setting will be discussed in this course.
D0076 Production of Instructional Web-based Materials (3/0): In this course, students will explore several software and e-learning platforms of open source to construct an integrated environment in which students can design and implement e-learning contents. Students will also create learning contents through Flash and other screen video capture tools, and build theses learning contents in e-learning platforms.

D0110 E-Learning Theory (0/3): This course addresses learning theories appropriate for the e-learning environment. Students will have the opportunity to illustrate various perspectives represented by these theories and apply them to analyze and solve e-learning problems.

D0206 Educational Evaluation (0/3): This course introduces issues regarding the evaluation of educational contexts. Topics for discussion include the philosophy, purpose, models, and procedures for evaluation, as well as standards of evaluation. The course focuses specifically on the evaluation of instructional design, instructional resources, instructional behavior (teaching evaluation), curriculum (program) evaluation and educational system evaluation.

D0207 Interaction Design of E-Learning (0/3): This course covers the study of principles and applications of human-computer interactions within the context of a rich constructivist learning environment. The topics discussed in this course will focus on interaction between (1) learner and learner, (2) learner and teacher, and (3) learner and e-learning material.

D0234 Instructional Design in E-Learning (3/0): This course aims to introduce the essential elements of Instructional Design (ID) in e-learning, and provide an overview of the fundamental principles, processes and practices that currently shape and define ID. Students are expected to apply the major steps of the ID model to develop e-learning courseware.

D0235 Design and Production of Instruction Web-Based Materials (0/3): Students will explore open source software and e-learning platforms to construct an integrated environment in which our students can design and implement e-learning material. Students will also create learning material through Flash and other video capture tools, and create teaching material for the already-established e-learning platforms.

D0236 E-Learning Courseware Design (3/0): This is an asynchronous online course that teaches about the creation of web-compatible resources using current web technologies.

D0269 Corporate Training Practices (3/0): This course focuses on practical skills and knowledge required for students aspiring to become training specialists in the corporate setting. Course topics include corporate value chains, roles and responsibilities of a training specialist/trainer, and ways to design and evaluate a training program. It also introduces three types of computer software widely applied in the corporate setting: MS Project, MS Excel, and MS Access.

T0081 Research Methods (3/0): This course discusses the procedures and methodology for conducting research in education, including research questions, defining variables, hypothesis testing, literature review, research design, writing a research proposal and paper.

D0624 Seminar in Creative Learning Technology (3/0): The course includes in-depth discussion of the important current issues in e-learning and application of the theories, methods and problem-solving strategies to complete the related projects.
GRADUATE INSTITUTE OF EDUCATIONAL POLICY AND LEADERSHIP

Degree Offered: M.Ed.

Director: Ya-Tzu Hsueh (薛雅慈)

The Institute

History
The Graduate Institute of Educational Policy and Leadership was founded in August 2000 with the inception of the Master of Education program. Since then, the Institute has been committed to training students in educational policy, administration, management and leadership. To promote continuing education and lifelong learning, an Executive Master’s professional training program was established in August 2002. To enrich the Institute’s curriculum and training of professionals, the Institute merged with the Graduate Institute of Higher Education in August 2008. Between 2008 and 2012 academic years, the Institute was offering courses in two specializations: (1) educational management and administration; and (2) higher education. These two sections have their specific required and elective courses, in addition to common courses for both sections. But, the Institute has combined the above-noted two sections into a unified system since 2013.

Missions
To prepare students for careers as educational administrators, policy analysts and advocates, and researchers capable of improving practices, informing policies, and serving educational institutions effectively.

Goals
1. To cultivate professionals in educational policy analysis.
2. To cultivate leaders in educational administration.
3. To cultivate researchers in educational policy and leadership.

Faculty

Honorary Professor
Flora Chia-I Chang (張家宜); Ying Yang (楊瑩)

Professors
Ching-ji Wu (吳清基); Dian-fu Chang (張鈿富); Hui-Ling Pan (潘慧玲); Hung-Chun Chen (陳竑濬)

Associate Professors
Ya-Ci Hsueh (薛雅慈)

Assistant Professors
June S. Chen (陳錫珍)

Course Descriptions

Master’s Program

Courses are divided into four categories:
1. Special courses of the university

Students are required to choose one of the following 4 courses:

D0456 Education and Future Studies (2/0): This course explores educational issues from a futures perspective that includes futures studies, education and learning trends, basic research tools and techniques, future education in knowledge economic societies, the learning revolution, curriculum and instruction innovations, and information technology.
D0455 International and Comparative Education (2/0): This course examines key topics in international education. Particular attention will be paid to current issues and debates in the field regarding the nature of development and international education.

A2217 Information Technology in Education (0/2): This course introduces various ways of applying information technology to education. Some related issues are addressed as well. Furthermore, diffusion of information technology in elementary and secondary schools is discussed, and finally some real cases are analyzed.

A2218 Total Quality Management in Education (0/2): This course provides a comprehensive coverage of quality control concepts. Topics covered include quality-improvement techniques, control charts for variables, control charts for attributes, lot-by-lot acceptance sampling by attributes, acceptance sampling plan systems, quality costs, and total quality management.

2. Foundation Courses: These courses cover two separate areas: educational research methods, and foundation courses in educational studies.

(1) Courses in Educational Research Methods

A. Required courses

D0210 Statistical Methods and Application (3/0): This introductory statistics course provides students with basic concepts of statistics methods, including the probabilistic model, statistical inferences, hypothesis testing, linear regression model, and analysis of variance.

A2129 Research Methods in Education (0/3): This course focuses on the theoretical introduction and practice of major methods in educational researches.

B. Elective courses

D0037 Method of Qualitative Studies (0/3): This course equips students with basic concepts in qualitative research. Students will develop the ability to evaluate research quality and receive hands-on experience in conducting research. Three major topics are covered in this course: basic concepts, research design and research techniques.

D0420 Literature Review of Research on Educational Policy and Leadership (2/0): This course involves the preparation of detailed written literature review on any subject related to students’ proposed master theses in educational policy and leadership. Students will identify a suitable topic for a written review, conduct a thorough search of the literature in a topical area, and write a thorough, insightful, and meticulously referenced review on the topic.

(2) Foundation Courses (Elective courses)

D0164 Finance of Education (0/2): This course provides an overview of educational finance, including financial policies, planning, budgeting, allocation, patterns of expenditure, and sources of income. This course combines theoretical knowledge with practical applications.

D0217 Sociology of Education (3/0): This course explores educational issues from sociological perspective which includes the different theories in the sociology of education, the critical issues in sociological studies of education, such as equality of educational opportunities, education and social mobility or stratification, the management of the classroom, relationship between teachers and students, process of socialization and education, the organizational climate and subculture in schools, professionalization of teachers, and the relations of schools with families and communities, etc.

D0164 Economics of Education (3/0): This course introduces students to the various aspects of the economics of education. It applies the tools of economic analysis to important educational policy issues. Topics include human capital theory and the returns to education, how schools are funded, trends in college and university pricing, market failure and the governmental provision of student loans, and individual and social choice in education.
3. Professional Courses

(1) Required Courses

**D0150 Leadership and Management in Education (3/0):** A comprehensive guide to understanding and developing leadership theory and practice in education, including the trait theory, contingency theory, situational theory, transformational theory, knowledge management and instructional leadership, etc.

**D0421 Study on Educational Policy (3/0):** This course helps students to understand theories related to educational policy and their practical implementation. The main focus of this course includes human capital theory, institutional theory, neoliberal theory, equity and excellence theory, etc.

**D0333 Field Practices in Education (2/0):** This course, which involves field practice, provides an opportunity for students to improve their practical competence in educational administration by arranging for an internship for 14 working days in governmental offices in educational administration both at central and local levels. (This course is exempted for students currently working in educational institutions).

(2) Elective Courses

Courses are divided into two categories:

A. Field of Educational Policy

**D0154 Studies on Educational Policy and Legislation (0/3):** This course focuses on the relationship of educational policy and legislation. Main topics include: educational policy formation through the legal process; required knowledge for students in the case by case practice of legislation; and the legal system in other countries.

**D0399 Program Evaluation of Educational Policies (0/3):** This course aims to assist students to develop basic concepts of evaluation, and furthermore, to have a good grasp of evaluation models, evaluation design and implementation, and the newly developed approaches of program evaluation. In addition to emphasizing basic knowledge of evaluation, hands-on experience is emphasized.

**D0480 Planning and Implementation of Educational Policy (0/3):** This course provides students an understanding of educational policy planning, decision-making, and change. Different models of planning and policy will be covered, and the complexities of implementation will be examined.

**D0516 Study on Educational Policy—National Basic Education (3/0):** This course aims to: (1) help students understand current national basic education policies; (2) analyze the content and implementation of national basic education; (3) review the problems faced by the national basic education.

**D0160 Study on Educational Policy—Higher Education (0/2):** This course helps students to understand theories and practices of higher education. Main topics include analysis of theories in higher education studies, globalization, internationalization, equity, the pursuing of excellence of higher education, and relationship between social mobility and higher education, approaches of access to higher education, and higher education quality assurance, etc.

**D0569 Study on Educational Policy—Teacher Training and Development (0/2):** This course explores educational issues about teacher training and development from an institutional perspective that includes policies and institutions of teacher training around the worlds. The process by which teachers are educated is the subject of political discussion in many countries, reflecting both the value attached by societies and cultures to the preparation of young people for life, and the fact that education systems consume significant financial resources.

**D0147 Studies on Emerging Issues of Educational Policy (0/2):** This course will focus on the exploration of the hot and new issues in educational policies first. This course will then, via group discussions, review the emerging issues in educational policies.
D0154  Theories and Practice of Educational Reforms (0/2): This course prepares graduate students to be masters in the theory and practice of educational change. Course content includes concepts, principles, models, and theories of educational change, as well as the status-quo and trend of educational reform of developed countries all over the world.

D0168  Studies on Educational Policies in Mainland China (0/2, or summer courses): This course mainly aims to explore the various educational policies in Mainland China. A field visit to Mainland China may be arranged and included, in order to provide students with a chance to understand intensively the field practice of education in Mainland China.

D0562  Studies on Educational Policies between Mainland China and Taiwan (2/0, or summer courses): This course mainly aims to compare the important educational policies in both of Mainland China and Taiwan. A field visit to Mainland China may be arranged and included in summer, in order to provide students with a chance to understand the similarities and differences of educational policies between Mainland China and Taiwan.

D0202  Comparative Studies on Educational Policies in Different Countries (0/2): This course aims to compare educational policies in different countries by exploring their development, major reforms, problems faced, and possible future development.

B. Field of Educational Leadership and Management

D0080  Ethics of Educational Administration (0/2): This course is organized into five parts. The first part explains the essence and context of ethics in educational administration. The second part discusses the principles and approaches of ethics in educational administration. The third part familiarizes students with the ethic codes of professional educators. The fourth part explores developmental trends of ethics in the education administration of UK and America. The fifth part discusses the development of professional ethics in the education administration of Taiwan.

D0097  Negotiation and Communication in Educational Administration (0/3): This course introduces theories on communication and negotiation, and equips students with the skills, methods and principles required to partake in administration work. It analyzes cases and proposes feasible strategies to cultivate students’ communication and negotiation abilities.

D0156  Theories and Practices of Education Evaluation (3/0): This course aims to clarify the concepts, theories, types or patterns of evaluation, and then to explore the existing educational evaluation schemes and their implementation.

D0163  Studies on Organization Behavior in Education (0/3): This course introduces foundations of individual behavior, values, personality and emotions, perception and individual decision making, motivation, communication, power and politics, conflict and negotiation, human resource policies and practices, organizational cultures, change and stress management, etc.

D0224  Studies on Management of Higher Education (0/2): This course is devoted to the examination of concepts and management practices in higher education. The course is intended to provide students with both theoretical and working knowledge of techniques, issues, policy, and practices as they are related to management and administration of higher education institutions.

D0307  Studies on School Administration (0/3): This course explores the theories and practice of school administration, and enhances student’s professional thinking and practical competence in school administration. General principles as well as current issues and projects of school administration will be intensively discussed.

D0308  Studies on Curriculum and Instructional Leadership (0/3): This course intends to explore main theories and practices for curriculum and instructional leadership as applied to schools. Related literature and case studies will be analyzed and discussions will focus on methods, strategies, and efforts for managing curriculum and instruction practices.

D0362  Studies on Change and Development of Educational Organizations (0/2): In this course, students learn how organizational development and change occur and why carefully planned change
can also have unintended consequences. Students analyze theories and practices of organizational development and change, evaluate causes of failure and factors of success in organizational development projects, and design optimal change interventions.

D0423 Studies on Decision-making in Educational Administration (2/0): This course introduces the meanings, characteristics and influential elements of decision-making of educational administration. It focuses on the processes and methods of decision-making of educational administration, and analyzes the logical positivism of decision-making of educational administration.

D0513 Study on Management in Cultural and Educational Industries (0/2): The aim of this course is to discuss the nature and types of knowledge, to examine strategies for managing knowledge-creating processes, and to provide an overview of technologies for knowledge sharing, and knowledge organization.

D0542 Emerging Issues in Educational Leadership (2/0): This course aims to explore and analyze the important and emerging issues on educational leadership.

*Courses for Executive Master’s Professional training program

Courses are divided into three categories:

1. Special Courses of the University
   Students are required to choose one of the following 4 courses:

A2122 Education and Future Studies (2/0): This course explores educational issues from a futures perspective that includes futures studies, education and learning trends, basic research tools and techniques, future education in knowledge economic societies, the learning revolution, curriculum and instruction innovations, and information technology.

A2217 Information Technology in Education (0/2): This course introduces various ways of applying information technology to education. Some related issues are addressed as well. Furthermore, diffusion of information technology in elementary and secondary schools is discussed, and finally some real cases are analyzed.

A2218 Total Quality Management in Education (0/2): This course provides a comprehensive coverage of quality control concepts. Topics covered include quality-improvement techniques, control charts for variables, control charts for attributes, lot-by-lot acceptance sampling by attributes, acceptance sampling plan systems, quality costs, and total quality management.

A2219 International and Comparative Education (2/0): This course examines key topics in international education. Particular attention will be paid to current issues and debates in the field regarding the nature of development and international education.

2. Foundation Courses: Courses covers two separate areas: educational research methods, and foundation courses in educational studies.

(1) Courses in Educational Research Methods

A. Required courses

A2129 Research Methods in Education (2/0): This course focuses on the theoretical introduction and practice of major methods in educational researches.

D0210 Educational Statistics (2/0): This introductory statistics course provides students with basic concepts of statistics methods in educational researches, including the probabilistic model, statistical inferences, hypothesis testing, linear regression model, and analysis of variance.

B. Elective courses
D0037 Methods of Qualitative Studies (0/3): This course equips students with basic concepts in qualitative research. Students will develop the ability to evaluate research quality and receive hands-on experience in conducting research. Three major topics are covered in this course: basic concepts, research design and research techniques.

D0261 Literature Review of Research on Educational Policy and Leadership (2/0): This course involves the preparation of detailed written literature review on any subject related to students’ proposed master theses in educational policy and leadership. Students will identify a suitable topic for a written review, conduct a thorough search of the literature in a topical area, and write a thorough, insightful, and meticulously referenced review on the topic.

Method of Multivariate Statistical Analysis (0/2)

(2) Foundation Courses (Elective Courses)

D0217 Sociology of Education (3/0): This course explores educational issues from sociological perspective which includes the different theories in the sociology of education, the critical issues in sociological studies of education, such as equality of educational opportunities, education and social mobility or stratification, the management of the classroom, relationship between teachers and students, process of socialization and education, the organizational climate and subculture in schools, professionalization of teachers, and the relations of schools with families and communities, etc.

D0164 Economics of Education (3/0): The purpose of this course is to provide students with concepts in various academic disciplines. Chapter 1 offers a brief introduction followed by a short discussion. In chapter 2, the role of human capital and the economics of education in early writings are discussed. Chapter 3 & 4 introduces production and cost functions in education and explores the internal efficiency of education systems. Educational finance follows in chapter 5-6; topics include the role of government in education and the voucher plan. An overall summary, major conclusions, and some suggestions for research make up the contents of chapter 7.

D0164 Finance of Education (0/2): This course provides an overview of educational finance, including financial policies, planning, budgeting, allocation, patterns of expenditure, and sources of income. This course combines theoretical knowledge with practical applications.

3. Professional Courses

(1) Required Courses

D0150 Leadership and Management in Education (3/0): A comprehensive guide to understanding and developing leadership theory and practice in education, including the trait theory, contingency theory, situational theory, transformational theory, knowledge management and instructional leadership, etc.

D0291 Theories and Practices of Educational Policy (0/3): This course helps students understand theories related to educational policy and their practical implementation. The main focus of this course includes human capital theory, institutional theory, neoliberal theory, equity and excellence theory, etc.

D0333 Theories and Practice of Educational Evaluation (0/3): This course, which involves field practice, provides an opportunity for students to improve their practical competence in educational administration by arranging for an internship for 14 working days in governmental offices in educational administration both at central and local levels. (This course is exempted for students currently working in educational institutions).

(2) Elective Courses

Courses are divided into two categories:

A. Field of Educational Policy

D0516 Study on Educational Policy—National Basic Education (3/0): This course aims to: (1) help students understand current national basic education policies; (2) analyze the content and
implementation of national basic education; (3) review the problems faced by the national basic education.

**D0160 Study on Educational Policy—Higher Education (0/2):** This course helps students to understand theories and practices of higher education. Main topics include analysis of theories in higher education studies, globalization, internationalization, equity, the pursuit of excellence of higher education, and relationship between social mobility and higher education, approaches of access to higher education, and higher education quality assurance, etc.

**D0569 Study on Educational Policy—Teacher Training and Development (0/2):** This course explores educational issues about teacher training and development from an institutional perspective that includes policies and institutions of teacher training around the worlds. The process by which teachers are educated is the subject of political discussion in many countries, reflecting both the value attached by societies and cultures to the preparation of young people for life, and the fact that education systems consume significant financial resources.

**D0147 Emerging Issues of Educational Policy (0/2):** This course starts with an introduction of the theories and practices of educational policies. It then analyzes emerging issues in educational policies.

**D0154 Theories and Practice of Educational Reforms (0/2):** This course prepares graduate students to be masters in the theory and practice of educational change. Course content includes concepts, principles, models, and theories of educational change, as well as the status-quo and trend of educational reform of developed countries all over the world.

**D0165 Study on Educational Policy and the Legislation (3/0):** This course focuses on the relationship of educational policy and legislation. Main topics include: educational policy formation through the legal process; required knowledge for students in the case by case practice of legislation; and the legal system in other countries.

**D0168 Study on Educational Policies in Mainland China (0/2, or summer courses):** This course mainly aims to explore the different educational policies in Mainland China. A field visit to Mainland China may be arranged and included, in order to provide students with a chance to understand intensively the field practice of education in Mainland China.

**D0562 Study on Educational Policies between Mainland China and Taiwan (2/0, or summer courses):** This course mainly aims to compare the important educational policies in both of Mainland China and Taiwan. A field visit to Mainland China may be arranged and included in summer, in order to provide students with a chance to understand the similarities and differences of educational policies between Mainland China and Taiwan.

**D0202 Comparative Studies on Educational Policies in Different Countries (0/2):** This course aims to compare educational policies in different countries by exploring their development, important reforms, problems faced, and possible future development.

**D0399 Program Evaluation of Educational Policies (3/0):** This course aims to assist students to develop basic concepts of evaluation, and furthermore, to have a good grasp of evaluation models, evaluation design and implementation, and the newly developed approaches of program evaluation. In addition to emphasizing basic knowledge of evaluation, hands-on experience is emphasized.

**D0480 Leadership and Management in Education (3/0):** A comprehensive guide to understanding and developing leadership theory and practice in education, including the trait theory, contingency theory, situational theory, transformational theory, knowledge management and instructional leadership, etc.

**B. Field of Educational Leadership and Management**

**D0080 Ethics of Educational Administration (0/2):** This course is organized into five parts. The first part explains the essence and context of ethics in educational administration. The second part discusses the principles and approaches of ethics in educational administration. The third part familiarizes students with the ethic codes of professional educators. The fourth part explores developmental trends...
of ethics in the education administration of UK and America. The fifth part discusses the development of professional ethics in the education administration of Taiwan.

**D0097 Negotiation and Communication in Educational Administration (0/3):** This course introduces theories on communication and negotiation, and equips students with the skills, methods and principles required to partake in administration work. It analyzes cases and proposes feasible strategies to cultivate students’ communication and negotiation abilities.

**D0163 Study on Organization Behavior in Education (0/3):** This course introduces foundations of individual behavior, values, personality and emotions, perception and individual decision making, motivation, communication, power and politics, conflict and negotiation, human resource policies and practices, organizational cultures, change and stress management, etc.

**D0513 Study on Management in Cultural and Educational Industries (0/3):** The aim of this course is to discuss the nature and types of knowledge, to examine strategies for managing knowledge-creating processes, and to provide an overview of technologies for knowledge sharing, and knowledge organization.

**D0224 Study on Management of Higher Education (0/2):** This course is devoted to the examination of concepts and management practices in higher education. The course is intended to provide students with both theoretical and working knowledge of techniques, issues, policy, and practices as they are related to management and administration of higher education institutions.

**D0293 Theories and Practice of Strategic Planning (0/2):** This is an introductory course in strategic planning that aims to enhance students’ competency in educational planning and management to prepare students for their future careers.

**D0307 Study on School Administration (0/3):** This course explores the theories and practice of school administration, and enhances student’s professional thinking and practical competence in school administration. General principles as well as current issues and projects of school administration will be intensively discussed.

**D0308 Study on Curriculum and Instructional Leadership (0/3):** This course intends to explore main theories and practices for curriculum and instructional leadership as applied to schools. Related literature and case studies will be analyzed and discussions will focus on methods, strategies, and efforts for managing curriculum and instruction practices.

**D0362 Study on Change and Development of Educational Organizations (0/2):** In this course, students learn how organizational development and change occur and why carefully planned change can also have unintended consequences. Students analyze theories and practices of organizational development and change, evaluate causes of failure and factors of success in organizational development projects, and design optimal change interventions.

**D0423 Study on Decision-making in Educational Administration (2/0):** This course introduces the meanings, characteristics and influential elements of decision-making of educational administration. It explores the processes and methods of decision-making of educational administration, and analyzes the logical positivism of decision-making of educational administration.

**D0513 Study on Management in Cultural and Educational Industries (0/2):** The aim of this course is to discuss the nature and types of knowledge, to examine strategies for managing knowledge-creating processes, and to provide an overview of technologies for knowledge sharing, and knowledge organization.

**D0542 Emerging Issues in Educational Leadership (2/0):** This course aims to explore and analyze the important and emerging issues of educational leadership.
GRADUATE INSTITUTE OF EDUCATIONAL PSYCHOLOGY AND COUNSELING

Degree Offered: M.Ed.

Director: Kuei-hsiang Han (韓貴香)

The Institute

The Graduate Institute of Educational Psychology and Counseling has been established since 2002, in response to the increasing importance and needs of psychological counseling in communities, families and schools. The program has the capacity of 23-27 students every academic year. The goals of the Institute are as follows:

1. To train students as professional counseling psychologists and teachers with psychology and counseling expertise.
2. To develop students’ theoretical background and academic research capabilities.
3. To strengthen students’ professional competency in order to fulfill the needs of psychological counseling in all-level of educational settings, communities and institutions.
4. To enhance students’ occupational competitiveness by offering a synthesis of cross-disciplinary fields with educational psychology and psychological counseling.
5. To broaden and diversify the visions of faculty members and students through an integration of theories and practices.
6. To equip students with knowledge bases and competency to acquire the professional certificate as a counseling psychologist.

The curriculum places an equal emphasis on educational psychology, counseling theory, and practice. The curricular structure includes research methodology, psychological foundation courses, areas of specialization and practicum. The courses of educational psychology emphasize diagnosis of learning difficulties, teaching and learning strategies, teaching performance assessment, and teacher effectiveness, etc. The courses of counseling emphasize systematic theories and practices of psychological assessment, group dynamics, expressive arts therapy, career counseling, school counseling, family therapy, music therapy, dance therapy, and play therapy, etc.

The Master of Education degree requires the successful completion of 32 credits of coursework, including 15 credits of required courses and 17 credits of elective courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

Faculty

Professors
Chih-en Ko (柯志恩); Kuei-hsiang Han (韓貴香)

Associate Professors
Li-chun Li (李麗君); Ming-lei Yang (楊明磊); Hung-yen Sung (宋鴻燕);
Chang Kuei-Chieh (張貴傑)

Assistant Professors
Wei-chen Chiu (邱惟真)

Course Descriptions

Master’s Program
D0024 Studies in Educational Psychology (3/0): This course presents an advanced study of the theories and processes of educational psychology at school levels, especially in relation to current research in identifying major variables in the teaching-learning process and theories and principles of learning.

D0025 Studies in Theories of Counseling and Psychotherapy (3/0): This course covers historical and contemporary theories of counseling, advanced study of techniques, and research findings.

D0026 Studies in Counseling Practice and Techniques (3/0): This course offers an introduction to major theoretical concepts in the counseling process, as well as techniques and laboratory experience in case conceptualization and counseling skills.

D0027 Seminar on Transpersonal Psychology (0/2): This course explores Western and Eastern theories related to spiritual development and the intersections of psychological growth and development with spiritual belief and experience, and discusses the historical origins and theoretical foundations of transpersonal psychology.

D0028 Studies in Learning Strategies (0/2): This course presents a history and overview of the systems of psychology applied to education. It also presents modern theories and current research in learning strategies and human motivation, especially in relation to the educative process.

D0029 Studies in Group Counseling (0/3): This course covers the study of group counseling methods and techniques; review of basic theories of group process; exploration of group processes through group interaction, and didactic analysis and synthesis.

D0030 Studies in Developmental Psychology (0/2): This course introduces all periods of life and takes a life-span perspective on all phases of life, including childhood.

D0032 Studies in Abnormal Psychology (3/0): This course aims to help students understand the definitions and fundamental philosophical issues related to abnormality. The course also describes and classifies various psychological disorders, such as anxiety disorders, mood disorders, schizophrenia, personality disorders, childhood psychopathology, psychoactive substance use disorders, and psychological factors of physical illness, and comparisons of different theoretical approaches.

D0041 Learning Diagnosis and Guidance (3/0): This course focuses on how to detect and diagnose students with learning difficulties, and discusses the kinds of assistance and guidance that can be provided to such students.

D0042 Internship of Educational Psychology and Counseling I (2/0): This course provides an internship in a human services agency (approved by the College) that focuses on the development and direct practice of human service professional skills. Prerequisites: senior standing; admission to professional standing.

D0043 Internship of Educational Psychology and Counseling II (0/2): This course provides an internship in a human services agency (approved by the College) focusing on the development and direct practice of human service professional skills. Prerequisites: senior standing; admission to professional standing.

D0068 Studies in Social Psychology (2/0): This course presents an examination of issues, theories, and research in selected areas of social psychology and other behavioral sciences that have implications for education and higher education policies, programs, and practices.

D0069 Seminar on Family Therapy (0/2): This course covers the theories and methods of many of the major family therapy theories including: strategic, brief strategic, systemic, narrative, family of origin, structural, and symbolic-experiential family therapy.

D0072 Studies in Ethical Issues of Counseling (3/0): This course presents legal and ethical concepts and issues relevant to the practice of psychology and student personnel services.
D0075 Studies in Career Counseling (2/0): This course presents methods and programs for facilitating the career development of individuals over a lifetime. Organization and development of activities and programs for all ages are emphasized.

D0114 Supervised Counseling Practicum (I) (2/0): In this course, students are required to fulfill six-hour weekly part-time practicum experience in community agencies. Through supervised professional work in different community service settings, students gain knowledge via hands-on direct psychological services.

D0115 Supervised Counseling Practicum (II) (0/2): Upon completion of all courses, students gain one year of practicum experience in community agencies. Through supervised professional work in different community service settings, students gain experience in applying a variety of intervention strategies and psychological services across the spectrum of psychopathologies.

D0116 Express Arts Therapy (0/2): This course provides knowledge and theories of express art therapy to help students analyze the therapy process. It also offers experimental express art groups to enable students to put theory into practice.

D0117 Seminar on Psychological Measurement & Assessment (0/3): This course provides group and individual assessments of cognition, behavior, emotion and personality, as well as their theoretical and statistical bases, construction, administration, interpretation of instruments, and evaluation theory and practice.

D0425 Positive Psychology (0/2): This course introduces the origin and thoughts of positive psychology, and helps students to learn the concepts and theories of positive psychology through textbook and important paper. In addition, students will learn how to apply positive psychology in daily life and counseling to embody the spirits of positive psychology into counseling practice.

D0426 Studies in Mental Health of Community, School and Enterprise (0/2): This course covers counseling issues in community, school, and enterprise through group interaction and innovation.

D0486 Program Planning and Educational Training (2/0): The course aims to develop students’ basic concepts of program planning and educational training, as well as to help students understand and evaluate the operation model and content. Through discussion of examples and actual operation, students are expected to develop the capacity of proposal writing on program and education training.

D0487 Music Therapy (0/2): This course is highlighted on the application and research in music therapy. The course units are outlined from the perspective of developmental psychology, with a model integrating the aspects of bio-psycho-socio-spiritual as the theoretical framework. Learners will be encouraged to study the principles of counseling psychology as well as to express motivation to display music competence. The course will proceed through practice and discussion, first with an introduction to the methods and theories of music therapy and followed by an emphasis on the needs of clients.

D0488 Seminar on the Creative Thinking (0/2): The objective is to construct systematically the theory and strategy of creative thinking through the four teaching methods: demonstration, illustration, interaction, and feedbacks. This course mainly helps students cultivate critical thinking and creativity. Through his or her understanding in creative thinking and strategy, the student applies his or her self-evaluation to different aspects and diverse areas.

D0489 Post-Modern Perspective of Psychotherapy (0/2): This course offers an introduction to major theoretical concepts, strategies, and skills of postmodern psychotherapy.

D0490 Mindfulness-Based Stress Reduction and MBCT (0/2): This course introduces theories and concepts of the Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Therapy (MBCT), with practicing the MBSR and MBCT techniques and discussing the research results of MBSR and MBCT.

D0491 Crisis and Trauma (2/0): The course is designed to enhance the students' knowledge and skills in the fields of trauma response and crisis intervention. Topics addressed in the course cover theoretical concepts, research findings and treatment strategies in a variety of traumatic events such as natural disaster, interpersonal traumatic experience, and personal/family crises.
D0492 Professionalism in the Helping Field (0/1): This course requires students to learn professionalism and attitude from the teachers’ sharing their thinking process, participating/assisting academic seminars, professional workshops, professional presentations, oral papers and other activities.

D0498 Counseling Intake Skills and Practicum (0/2): The objective of this course is to familiarize graduate students with the procedural and skills of intake. This course covers the evaluation of clients’ problems and needs, the strategies of following arrangement, skill practice and practicum.

T0081 Research Methodology (0/3): The main purpose of this course is to provide students with a basic knowledge of research. Through the course, students will be able to learn the process of conducting research, features of different research methods, and APA writing style.

T8000 Thesis (0)
GRADUATE INSTITUTE OF FUTURES STUDIES

Degree Offered: M.A

Director: Shun-jie Ji (紀舜傑)

The Institute

The Graduate Institute of Futures Studies was established in 2002. Its main objective is to integrate various disciplines to meet the megatrend of the “learning revolution.” The institute emphasizes a transdisciplinary approach in facing the new era of globalization, information-oriented education and future-oriented education. The Institute also places emphasis on local Taiwanese society’s historical and cultural development in the broader context of globalization. Students will receive long-range, forward-looking and integrative training so as to become future leaders with insights and visions. Our missions are as follows:

1. To carry out the design and instruction of core courses of futures studies.
2. To make general education courses future-oriented.
3. To make future-oriented innovations in instruction, research, administration and service.

Goals of the institute are as follows:

1. To equip students with the capability of environmental scanning, scenario building and visioning within an integrated context of social change.
2. To cultivate students as future global elites with critical and innovative thinking in the fields of education and social sciences.
3. To train students in policy and planning and develop their interest in local and global issues.

The Institute also offers undergraduate futures courses in five major areas: futures studies in society, technology, the economy, environment and politics. In addition, it has also designed correlated courses for graduate studies. The Institute publishes a scholarly quarterly periodical, Journal of Futures Studies, and has been actively ordering and exchanging essays, journals, and books, coordinating scholarly discussion via international conferences, workshops, websites, and co-sponsoring seminars with the World Future Society (WFS) and World Futures Studies Federation (WFSF).

Faculty

Professors
Jian-bang Deng (鄧建邦)

Associate professors
Jui-kuei Chen (陳瑞貴); Kuo-hua Chen (陳國華); Shun-jie Ji (紀舜傑); Mei-mei Song (宋玫玫);

Assistant professors
Li-hui Peng (彭莉惠); Jeanne Hoffman (霍珍妮)

Visiting Research Fellow
Inayatullah Sohail (蘇哈爾)

Degree Requirements
Requirements of a Master’s degree in social science.
Completion of 28 credits of courses, including 6 credits of required courses, and 22 credits of elective courses. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member, and pass an oral examination.

Graduate Course Descriptions

A2033 Issues in Futures Studies (2/0): This course explores problems, trends and emerging issues in futures studies. These include: health futures, developments in genetics, innovation in technology particularly artificial intelligence, demographic changes, military futures, and gender futures.
D0010 Theoretical Approaches to the Future (3/0): This course develops the academic basis for futures studies. The origins, approaches, philosophical foundations for the field are explored, as well as questions about the future of futures studies.

D0011 Macrohistory and Macrohistorians (2/0): This course examines various perspectives on individual, social, and civilizational change. Macrohistory is the study of social systems, along separate trajectories, in search of patterns.

D0012 Social Science Research Methods (3/0): This course aims at equipping students with the capability of conducting interdisciplinary research independently.

D0013 Organizations and Movements in Futures Studies (2/0): This course aims to discuss: Which organizations support the work of futurists? Where are they located? What case studies exist on the successful use of the futures studies approach? Which movements are future oriented (or are they all single issue present based)?

D0014 Technology, Innovation and Learning (2/0): This course aims to discuss: What are the trends in pedagogy? How can educational systems be more future oriented? What are the case studies to support innovation in education? What will the education system of the future look like?

D0015 Regional Development and Globalization (2/0): This course examines the impact of globalization on regional development, including its effects on the national level, the Asia-Pacific region, and the world. Globalization will be emphasized with regard to the impact of multi-national enterprises, labor force migration, industrial clusters, capital interventions and technological innovations.

D0016 & D0017 Proseminar I & II (1/1): This introductory seminar will serve as a thorough academic orientation for postgraduate students. It provides students with the skills needed to become professional futurists.

D0018 Change and Development (0/3): Theories of social change are based on organizational traditions that emphasized innovation, control, planning and management. This course employs change and development theories to explore the futures of business organizations and nations, particularly on the impact of globalization and post-colonial societies.

D0019 Futures Studies on Sustainable Development (0/2): This course defines sustainable development, a term which has been misused and misinterpreted by several professions, in a comprehensive manner. Since its being introduced in 1987 for the first time, Sustainable Development has become the most politically correct slogan for some superficial purposes. Therefore, exploring the true meaning of Sustainable Development is a good starting point for finding out its implications and practices. Sustainability is intergenerational in nature. That is, the major concerns of Futures Studies are actually linked to the past, present, and future.

D0020 Leisure and Working Society (0/2): Leisure gradually replaces traditional working patterns and becomes a new lifestyle for upcoming generations. Will leisure replace traditional working patterns? Will leisure create more work opportunities? Is leisure simply another form of work? These questions will form the basis for discussion in this course.

D0021 Multiculturalism and Population Change (0/2): What is multiculturalism? Through the global village or local Taiwanese perspectives, this course leads students to explore problems of multi-ethnics, and conflicts of the majority and minority. Meanwhile, students will discuss with the result of the coming elderly society and complex patterns and relations of families.

D0023 Research Methodology in Futures Studies (0/3): This course is part of the core curricula of the Graduate Institute of Futures Studies. It has been designed for graduate students to understand the methodology of future studies and to apply these methods to analyze future issues, including those relating to society, technology, the economy, the environment and politics.

D0066 Global Change and Development (0/2): This course explores the complex process of social change and development. Its main objectives are to enhance students’ learning capacity in identifying
central arguments (learning to pick out what’s important), cultivating skeptical pragmatism, and practicing critical reasoning. The course incorporates four thinking exercises that focus on the following questions: what are the main point(s) of the theories explored? How does that point appear in historical, contemporary or future social changes? What part of the theory doesn’t make sense or might even be wrong? What does this theory assume that distinguishes it from other theories?

D0073 Philosophical Elements of Futures Studies (2/0): This course is designed to discuss the traditions of Futures Studies, including economic trends and predictions, sociological context analysis, the origin and result of change and development, and construction of time and space by philosophical perspectives.

D0075 Trend Analysis—Exploring the Long Term Future (2/0): This course aims to discuss: what is the long term future of humanity? What are the critical factors necessary for survival? Can the long-term future be forecasted?

D0076 Designing the Future (0/2): This course focuses on how to create the future. Design implications in creating preferred futures are explored. What is the difference between a good and a perfect society? How can one ensure that one’s political and social design is robust and does not close off the future?

D0077 Cultural Innovation and Apprenticeship (2/0): This course provides you with an understanding of organizational and societal change and developing innovation capability through the lens of futures studies. In this class we will explore key futures concepts, tools and methodologies and apply them to real-world situations. You will use strategic foresight tools to lead to better decision frameworks and additional time to develop organizational readiness for change and social action.

D0078 Globalization and International Migration (0/2): The term “migration” might have nothing to do with you, if we do think migrants only refer to those who want to get a green card in the US or those who have married to Taiwanese people. The fact is, however, where there are people, there is migration. Migration is so fundamental a phenomenon that affects modern society in many ways, especially in the current era of globalization. This seminar invites all participants to explore the phenomenon of migration. In the first part of the seminar we discuss the reasons why people migrate, the history of migration in Europe, emerging issues of migration and new models of future migration. The second part of the seminar focuses on a specific type of international migration: professional migrants. “Modern capitalism,” “work,” “mobility,” “flexibility” and “transnational lives” are some key concepts which will help us to understand this new type of migration.

D0079 Biotechnology and Risk Society (2/0): Adopting theoretical perspectives from risk society, this course intends to explore the level of social awareness regarding genetic engineering. Public interest, value orientation, and associated attitudes are among the focus of issues.

D0080 Network and Information Society (2/0): Questions and discussions will be the focus of this course. Who are the characters in the segmented polysepalous network? What are the learning networks? How will bureaucracy change in the future? How are social networks good for the development of globalization?

D0081 Religion and Civilization Conflicts (0/2): This course starts with the intertwined relationship between technology and religion. What form will religion and global consciousness take in the future? What values do New-Thought churches advocate? What are scenarios for adherents of world religions? What is the religion of humanity?

D0087 Vision and Alternative Futures of Public Policy (2/0): The evaluation of governmental policy usually focuses on its implicit and explicit goals. It is not unusual seeing policies used to achieve political interests that are implemented without comprehensive consideration. A wrong policy imposes great cost on every aspect of the society and should be avoided. This course uses the methodology of Futures Studies—“Vision-Picture-Strategy”—to build appropriate models for policy making and evaluation.

D0090 Practical Uses of Futures Knowledge (2/0): This seminar will invite all participants to combine theory with practice in futures studies. Every seminar participant should share his/her experiences during practicum in summer 2011.
D0103 Futures Thinkers and Futures Thinking (2/0): Futures thinkers and futures thinking approaches the study of the future by analyzing futurists. These include academics and activists in the field. The following questions are asked of leading futurists. (1) What are the influences in your work? (2) What methods do you use in your futures studies? (3) What trends do you see creating the future? (4) What is your vision of the future? (5) References. The purpose of these questions is to gain insight into each scholar’s story in futures studies. The purpose of this course, thus, is to better understand the theories, values and methods of futures studies by understanding the actors in the field.

D0119 Trends in Human Resource Management (2/0): This course elaborates the futures issues in terms of human resource management. It will also focus on how globalization and globalization impact the issues in selection criteria, and developing effective global managers.

D0120 China’s Economic and Political Change (0/2): This course aims to help students inquire into the structural elements underlying Chinese society. It covers political, economic and social issues that have been long debated. The course depicts the difficulties and opportunities China encounters in the process of modernization.

D0121 Seminar on Global Trend Watch (0/2): The purpose of this seminar is to provide students with an understanding of those mega trends or future topics of the new era. It focuses on regional development, global governance, knowledge based economy, innovation and social change. This course involves both theoretical lectures and practical visits.

D0122 Multicultural Studies & Organizational Change (2/0): This course covers multicultural issues in changing and developing organizations. Organization development inspires the talents of individuals within the organization. Such individuals pursue their own self-interests, which involve making the organization more successful and making their quality of working life more satisfying.

D0123 Globalization and Transnational Migration (0/2): The national state is usually understood as an imagined community with a single people who have an undivided loyalty to a common government and a shared past. Hence, in the past, immigrants were forced to abandon or deny their ties to their societies of origin. Globalization and transmigrants, however, have greatly changed this situation. Transmigrants construct their identity in more than one society and preserve the culture and identity of the societies from which they emigrated. This course attempts to discuss this new phenomenon from various viewpoints, such as transnationalism, citizenship, methodological nationalism and multiculturalism, etc. Some case studies in Taiwan are also included.

D0126 Organization Vision and Innovation (0/2): With the dawn of the 21st century, there is an emerging and exponentially accelerating force for global societal and organizational change. Organizational environments in the new century are chaotic and require rapid response from highly committed, productive, intrinsically motivated organizations with self-directed and empowered teams that are flexible, networked, diverse, and global. The organization must break through traditional strategic thinking but see clearly and thoroughly the possible change of the environment. Additionally, it also needs to propose a long-term sustainable vision, to develop sustainable visions, and to recommend actions to move towards the vision so as to achieve continuous breakthroughs in organizational development and industrial competition. This course attempts to explore the relationship between organizations and the future environment by examining theories of innovative management and futures studies; and further, to discuss the creation, development, promotion, sustainability, and change of innovative vision and its related managerial creative issues.

D0136 Population and Aging Society (2/0): This course presents emerging issues of aging from a futures perspective as well as a transdisciplinary approach. One of the major goals of this course is to encourage whole-of-government and community debate on the structural aging of the population and the interconnected needs of all generations. It focuses on government planning frameworks and aims to generate a transformational shift in how government views the aging of population.

D0153 Migration and Modern Society (2/0): This seminar invites all students to explore the phenomenon of migration. In the first part of the seminar, we discuss the reasons why people migrate, the history of migration in Europe, emerging issues of migration and new models of future migration etc. The second part of the seminar focuses on a specific type of international migration: professional
migrants. “Modern capitalism,” “work,” “mobility,” “flexibility,” and “transnational lives” are some key concepts that will help us to understand this kind of migration.

**D0157 Emerging Issues for Government (2/0):** This course focuses on the major issues of government from the perspectives of history, politics, the economy, and society, and explores the past, present, and future.

**D0171 Sociology of Mobilities (2/0):** This course aims to introduce the new emergent mobile phenomenon based on theories of multiple mobilities: from technological and media mobility (mobile transportation to mobile phones), mobile people (tourists/migrants/travelers), mobile objects and symbols, mobile spaces and the danger/risk and surveillance that results from multiple mobilities.

**D0210 Statistic Methods and Application (3/0):** Statistical methods and applications, such as SPSS and Minitab, are used to analyze industrial, economic and social surveys. Graduate students are expected to interpret results through experimental designs, test research hypotheses, and analyze variance, regression and trend analysis.

**D0215 Globalization and Education Change (2/0):** Globalization is one of the most important trends in this century. The extent and the depth of its influence to modern societies have far exceeded people’s comprehension and imagination. Therefore, it is one of the major fields to consider when exploring future possibilities. This course will introduce the formation and development of globalization as well as its effects on modern education. It will also examine recent social transformation by investigating changes to educational forms and content.

**D0219 Organizational Change and Uncertainty Management (2/0):** The fast changing and uncertain environment of the 21st century require organizations to be agile and responsive. In an environment of continuous and unpredictable change, organizations must develop a capacity to survive by reacting quickly and effectively to changing environments, and to create a sustainable future. This course aims to explore uncertain environments, develop successful strategies and manage changing organizations.

**D0230 Designing the Future: Future-Oriented Policy Studies (0/2):** This course emphasizes futures studies. Related topics include key methods in policy studies and case studies in future-oriented planning.

**D0241 Seminar on Futures Studies Ⅰ: Social Science Research (0/1):** This course teaches students how to undertake social research using future oriented thinking. From the process of forming research topics and writing literature reviews, to devising research methods and using academic formats of writing, this course teaches students skills in social research by discussing related literature and examining students’ own research in the process.

**D0242 Seminar on Futures Studies Ⅱ: Social Science Research (1/0):** This seminar deals with the writing of futures studies. Different writing techniques and experiences of field researchers will be introduced in this seminar.

**D0243 Social Conflict and Educational Innovation (2/0):** This course examines recent and future trends in university education in the context of the vast changes in the mode of production and social relations ushered in by the knowledge economy. We will look at past theories of the university as “state apparatus” (Althusser) and a “disciplinary institution” (Foucault) as well as recent work on the university in relation to “disorganized networks” (Rossiter) and “cognitive capitalism” (Moulier-Boutang).

**D0244 Gender, Art/Culture and Society (0/2):** This course will introduce the issue of feminist art practices through feminism, sociology of art and cultural studies. It will firstly introduce feminist theories, and then analyze how the social institution of art includes or excludes women and homosexuals, and how art practices construct gender performance and identities. Finally, it will introduce some inspiring feminist artists to explore related theoretical issues.

**D0245 Tourism, Leisure and Consumer Culture (0/2):** This course introduces the historical development of tourism and leisure and its social transformation. It discusses the mechanism of tourist destination making and leads students to inquire about consumption aspects of tourism and tourist
practices, including issues related to package tours, backpackers’ journeys, travel photography, souvenir shopping, tourist experiences, danger/risk tourism and insurance.

**D0247 Ethnography in Futures Studies (0/2):** The goal of this course is to develop participants’ ability to apply qualitative research methods to futures studies. Course content includes principles and applications of qualitative research methods. It also seeks to intensify students’ learning in research methods through practical exercises.

**D0286 Social Development in Contemporary China (0/2):** China is now in transition from a “world factory” to a “world market.” This seminar invites all participants to explore the social development in contemporary China. In the first part of the seminar, we discuss Chinese social structures and moderation. The second part of the seminar focuses on urban-rural mobility and the “Hukou” (household registration) System in China. The third part of the seminar discusses issues relevant to education, marriage and the identity of migrant workers in coastal cities. The final part of the seminar deals with the topic of new emerging generations in China.

**D0288 Cultural Studies on Museums and Exhibitions (2/0):** This course aims to introduce to students the social significance and changing dynamics of public displays. It begins with the historical shaping of the public display in terms of spatial technique, and then explores how public displays have been involved in the process of defining and organizing different social categories. Finally, it discusses how public displays have helped to transform society. Specifically, this course will firstly familiarize students with basic terms relevant to public display coined by sociologists. Then, through discussions of different examples of public display—from exhibitions, museums, expos, festivals to theme parks—this course explores current academic discussions on issues of the public and displays. Finally, through discussions of some recent cases of exhibition regimes, students will learn about the transforming nature of exhibitions in globalizing societies. In addition to introducing some theoretical literature, this course also encourages students to attend and appreciate different kinds of public displays and share their comments on recent news relevant to public displays with their classmates. Some after-class activities, such as exhibition trips, will also be recommended in the class.

**S0467 Applied Statistics (0/3):** This course provides graduate students with a systematic treatment of the quantitative study. The major issues include testing the research hypothesis, Chi-square test and non-parametric statistics, analysis-of-variance, simple and multiple variable regression, dummy and regression diagnostics, and Time Series analysis. Many of the statistical software packages, including SPSS+, Minitab and SAS, are also employed in the practical assignments. Finally, students will learn how to conduct a set of survey data, to solve some common problems, and to interpret the complex findings of the empirical studies.

**D517 Foresight Lecture Series (0/2):** The course equips students with capability in practical uses of futures knowledge. To envision futures from a wide variety of career possibilities, speakers of the courses are mainly prominent leaders from business, corporations, and industry.

**D561 Foresight Lecture Series (0/2):** This is an introductory course for students of the Graduate Institute of Futures Studies, aiming to familiarize students with the life as a graduate student.

**D580 Gender, Work and Trends (0/2):** The main purpose of this course is to explore the interest of research institutes in the study of gender labor and trends. The topics covered by the course, includes the supply and demand sides of the labor market, explores the changing trends in gender labor and gender work that are evident in the labor process. In the view of gender work, the analysis of labor market demand and supply orientation is included. This course focuses on such things as a discussion of employers' statistical discrimination, internal labor market and gender classification, as well as the distribution and promotion of organizational work, and gender and stratified division of labor system construction. On the demand-side section of the labor market, this course focuses on two main points, one for the expansion of higher education and the gender link of the labor market; one for the credit and gender selection of the profession. How to influence the development experience of different gender in the labor market. The two are also recent gender and labor research the latest discussion direction and analysis point of view. A section on trends in gender work will analyze emerging trends related to gender work, such as the recent dispatch of labor, female entrepreneurship, or female high-level managers or leadership styles.
D580 Ures Theory & Methodology (0/2): This course offers a theoretical analysis on the different aspects of futures research. It includes four main topics: 1) Why Futures Studies 2) From Utopia to a New Discipline 3) Classic Works on Futures Research, and 4) Selected Issues on Futures Research.

D583 Young People’s Future (2/0): Young people are future creators. However, along with the increasing globalization and individualization, young people in many societies have to choose their lifestyles among uncertainties and complexity. This seminar focuses on topics related to young people’s futures such as young people’s future visions, new lifestyles of young people, uncertainty and precarious situations in youth employment, young activists and the future they want.

T 8000 Thesis (0/4)
GRADUATE INSTITUTE OF CURRICULUM AND INSTRUCTION

Degrees Offered: M. Ed.

Director: Ru-chieh Huang (黃儒傑)

The Institute

The Institute of Curriculum and Instruction was established in 2007 to promote in-depth research and knowledge about local and global curricular and instructional issues. Our mission is to prepare global-minded leaders and professionals for better curriculum and instruction at all levels. We value scholarship, policy and practice in areas of curriculum development, implementation, innovation, and teacher development. Students will also be oriented toward concerns for multiculturalism, technological development, and critical perspectives in curriculum and instruction and deliberate change possibilities for a world that is increasingly interdependent.

Faculty

Professors
Li-hua Chen (陳麗華); Ru-chieh Huang (黃儒傑); Pei-yee Lee (李珮瑜); Philip Shieh (謝朝鐘)

Associate Professors
Yueh-hsia Chang (張月霞); Chia-jwu Tai (戴佳茹)

Assistant Professors
Tseng sheng-shiang (曾聖翔)

Degree Requirements

Requirements for a Master’s degree:
Completion of 32 credits, including 9 credits of required courses and 23 credits of elective courses. Students are also required to submit a written master's thesis completed under the supervision of a faculty member, and pass an oral examination.

Course Descriptions

Master’s Program

T0081 Research Methodology (3/0): This course aims to prepare graduate students for reading, analyzing, criticizing, and writing a dissertation, thesis, or a scholarly journal article. Topics include major paradigms and fundamental methods, literature review, instruments design and administration, data collection and analysis, results explanation, and research ethics.

D0257 Seminar on Curriculum and Instruction in Globalization (3/0): This course deals with issues of curriculum and instruction in the era of globalization. Seminar topics could range from curricular and instructional changes in major countries, issues of policy and implementation in different contexts, to global education and the pursuit of global citizenship in various parts of the world.

D0259 Inquiry on Classroom Teaching and Learning (0/3): This course examines current theories into practice on the issues of classroom management, assessment, community building, critical thinking, and decision making in the context of actual classroom experiences. Students will develop practical strategies, investigate ways to affect children’s learning in the classroom, and reflect systematically.

D0285 Multicultural Curriculum and Instruction (0/3): Deep democracy requires a citizenry that embraces multiculturalism. Multicultural curriculum and instruction helps establish multicultural values, and enables teachers to design and instruct multicultural curricula. Participants of this course
will explore their own values and multicultural experiences, understand how different ethnic groups, including “new Taiwanese children”, encounter learning difficulties, and seek to make changes in the curriculum and instruction

**D0283 Seminar on Textbook Design (0/3):** After the textbook policy has been changed into censorship system, the issues of textbook have become more important. The aims of this course are to introduce the principles and perspectives of textbook design, to discussion edition, censorship, adoption, evaluation of textbook, and to analyze the contents of textbook. Base on discussing above contents, this course hopes to develop students’ abilities and interests in textbook research.

**D0288 Educational Statistics (3/0):** This course is designed to explore the important statistical methods in the research. The statistical methods include t test, $\chi^2$ test, correlation, ANOVA, etc... The teaching activities include explaining the concepts, citing instances, and exercising sample problems.

**D0325 Seminar on Curriculum and Instruction (3/0):** Based mainly on the assigned class reading, this course explores the possible key competencies of future generations. It also discusses how the educational system can foster students’ competencies needed for the future. And different kinds of curriculum and instruction in many kinds of schools will be discussed.

**D0392 Action on Research in Curriculum and Instruction (3/0):** Student will be able to apply the action research in their essays.

**D0427 Curriculum and Instructional Theories (3/0):** This course is designed to introduce the students to some foundational theories of instruction and curriculum. Students are encouraged to reflect upon their own experiences and be able to develop curricula that are suited for learners and practice their beliefs about teaching and learning.

**D0429 Seminar on Technology Application in Learning (0/3):** This course aims to investigate applications of emerging learning technologies on a global scale, and practical ways of integrating such technology into local educational settings.

**D0509 Seminar on Curriculum and Instruction for Disadvantaged (0/3):** This course introduces the theories and practices of curriculum and instruction for the disadvantaged students, and develops students’ abilities and interests in research about curriculum and instruction for the disadvantaged students. Contents include the approaches of curriculum and instruction for disadvantaged students, disadvantaged students’ learning problems and teachers’ teaching dilemmas, curriculum design and textbook transformation for disadvantaged students, etc.

**D0519 Study on Curriculum Design and Development (3/0):** Principles and elements of curriculum development, major curriculum design models, curriculum implementation and evaluation will be introduced. Critical analysis will be on issues of national curriculum standards, frameworks, school-based curriculum development, textbooks censorship and adoption, curriculum and reform dilemmas.

**D0521 Learning Diagnosis and Learning Strategies (3/0):** The main purposes of this course not only guide students to understand diversity learning dinosaur tools but also assess learning problems of students. And then we can provide effective learning strategy to improve achievements of students.

**D0524 Study on Curriculum Management and Leadership (3/0):** The aim of this course is to guide students to understand the theoretical development and the practical content of curriculum management and curriculum leadership. The purpose of curriculum management is to help ensure that all students will get the most out of their education. The first part of curriculum management is curriculum design. At this stage, educational philosophy and practice is taken into consideration. Curriculum implementation follows, after which administrators train teachers so that they will be able to deliver the curriculum in a way that will most benefit the students. Curriculum leadership implies that, during the process of curriculum development, assistance and guidance are provided for the teaching method, the curriculum design, the curriculum implementation and the curriculum evaluation in order for teachers to enhance effective teaching and learning performance of students. Based on this, the main content of curriculum leadership can be categorized into the following six areas: (1) to set goals and plans of the courses; (2) to manage and develop educational programs at schools; (3) to inspect and assist teaching improvement; (4) to develop professional competences of teachers; (5) to evaluate learning outcomes of students; (6) to shape the culture of developmental courses. Therefore, curriculum leadership is
aimed to improve curriculums and to improve teaching under the support of administration in terms of its strength and resources; it can be claimed to include various aspects such as courses, management, teaching, student learning and school culture. In short, the basic idea of curriculum leadership lies in the effective curriculum and teaching design under the power of leadership, which will be applied to actual classroom teaching so as to improve students’ learning outcomes.

D0525 Study on Curriculum Development and Instructional Design (0/3): The course aims to develop students’ competence in curriculum and instructional design and advance understanding in learner-centered paradigm in the 21st century. In this course, students will explore and experience diverse instructional strategies, such as collaborative learning and participatory learning, and reflect on their current practice to refine their curriculum and instructional design.

D0529 Inquiry on Classroom Teaching and Learning (0/3): This course examines current theories into practice on the issues of classroom management, assessment, community building, critical thinking, and decision making in the context of actual classroom experiences. Students will develop practical strategies, investigate ways to affect children’s learning in the classroom, and reflect systematically.

D0566 Seminar on Assessment for Learning (0/3): Because education is shifting from the instructor-centered to the learner-centered paradigm of education, the major focus of assessment shall be placed on designing and implementing assessment to support effective and personalized learning. This course aims to develop pre-service and in-service teachers’ (1) awareness of the changing purpose of assessment from sorting students by their performance to supporting students in the learning process, (2) theoretical understanding of assessments for learning, (3) professional development regarding their knowledge and skills in designing and implementing the kinds of assessments for learning, and (3) research design competence by exploring research on the relevant topics.

D0578 Seminar on Teacher Professional Development (0/3): This course introduces the theories and practices of teacher professional development, and develops students’ abilities and interests in research about teacher professional development. Contents include analysis and discussion of curriculum and instruction, classroom management, student counseling, and career development for teachers in diverse stages.
CENTER FOR TEACHER EDUCATION

Director: Chien-han Chen (陳劍涵)

The Center
The Center for Teacher Education was established in 1995 as a result of Taiwan’s democratization and trends of diversification in teacher education. It recruits college and graduate students at Tamkang University who are committed to teaching and prepares them to become professionals at the secondary-school level. The Center is one of the leading teacher education institutes in Taiwan.

The core mission of the Center for Teacher Education is to help prospective teachers develop: (1) a strong knowledge base in the field of education; (2) an ability and habit to self-reflection based on their understanding of the humanities and their professional knowledge of education; (3) and the ability to put their beliefs into practice.

Pre-service teachers are required to complete at least 28-credit courses in general educational knowledge, curriculum and instruction, subject matter-specific methods, counselling, classroom management, evaluation and assessment, and elective courses that aim to broaden pre-service teachers’ knowledge in humanities and diverse subjects. A 54-hour non-credit service learning opportunity is built into the program to encourage social participation and theory into practice. A six-month internship is required to complete the program. To be certified, teachers must pass a National Teachers’ Certification Examination following their internship.

The Center regularly holds activities to facilitate student participation and stimulate student talents through award-wining competitions. Opportunities for school and institution visits are arranged each semester to strengthen the links between theory and practice. We aim to train teachers who not only are capable of teaching topics related to their subject matter, but also are caring individuals who are committed to teaching students with diverse backgrounds.

Faculty

Professors
Ya-fung Chang (張雅芳)

Associate Professors
Chia-ling Hsu (徐加玲); Huey-fang Ju (朱惠芳); Chien-han Chen (陳劍涵);
Li-chun Li (李麗君)

Assistant Professors
Yi-chun Lin (林怡君)

Course Descriptions

Undergraduate Courses

A0599 Introduction to Education (2/0): This course will help students to: (1) analyze the function, value, principles and criteria of education, (2) explore the process and product of education, and (3) inspire their commitment to practical applications of education.

A0665 Developmental Psychology (0/2): This course provides an introduction to the human development from birth to death, including physical, cognitive, and social growth of people within cultural contexts. Students are expected to integrate their personal experiences, knowledge of psychology, and their observations of human development with the content of this course. In addition, discussion of implications for education and curriculum design are emphasized.

A1370 Instructional Theory (0/2): This course covers theories and methodologies of instruction. It also examines issues of how to teach effectively and efficiently to promote student learning.
A1584 Educational Philosophy (0/2): This course introduces different perspectives on education by both Eastern and Western scholars so as to help students construct their own philosophy of education.

A1588 Sociology of Education (0/2): Basic sociological theories are introduced in this course. Topics relevant to class, gender, race and ethnicity, issues of quality and equality, problems of educational reform, culture, and social justice are discussed.

A1626 Theory and Practice in Counseling (2/2): This course introduces the basic principles of guidance, with various prospects of models, and explores the process and essence of guidance through problem-solving in the context of real cases.

A1628 Classroom Management (2/2): This course covers the principles and strategies of classroom management. An emphasis is placed on how to apply these strategies so as to create a positive environment in teaching and learning.

A1630 Educational Administration (2/0): This course covers both theories and practices of educational administration, including educational policies, systems, management theories, leadership, and trends of education development.

A1774 Psychology of Adolescents (2/0): Based on the theories of development and guidance, this course adopts cases of empirical studies to investigate the issues of adolescent physiology, intelligence, personality, value systems, and self-concepts, etc.

A1775 Behavior Modification (0/2): This course introduces the use of empathy, discourse skills, operant conditioning principles, and modification techniques to develop different ways of achieving behavior modification.

A1943 Group Counseling (2/0): This class is designed to help students to learn group counseling knowledge and skills appropriate to school settings. Course objects includes principles of group dynamics, group counseling processes, functions and applications to diverse students for educational purposes.

A2092 Introduction to Special Education (3/0): This course introduces the characteristics of various types of students with special needs, and outlines the relevant treatments in terms of instruction, classroom management, interpersonal relationships, and teacher-student interactions.

D0054 Curriculum Development and Design (0/2): This course introduces some basic concepts of curriculum and the process of curriculum development, which typically consists of analysis, design, implementation, and evaluation. Related issues and future trends are discussed as well.

D0146 Secondary School Internship (2/2): The aim of this internship course is to provide secondary school student teachers opportunities to put theory into practice, learn to reflect with a disciplined mind, and become skillful in classroom management and teaching. Student teachers will need to keep journals and construct portfolios that record the process they go through to become reflective practitioners.

D0172 History Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0176 History Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0377 Gender Education (0/2): This course aims to help students develop higher sensitivity and awareness toward gender issues. Students are expected to become leaders of the field by in-depth personal reflections related to sexual education, gender equality, and social justice.

D0452 Chinese Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.
D0453 Chinese Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0457 English Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0458 English Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0459 Mathematics Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0460 Mathematics Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0461 Civics and Society Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0462 Civics and Society Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0471 Spanish Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0472 Spanish Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0473 French Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0474 French Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0506 Physics Instructional Materials and Methods (2/0): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0507 Physics Instructional Practicum (2/0): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0536 Career Development Education (0/2): The goals for this course are for students to learn and apply the major career education theories. Students will also learn to integrate career counseling skills to design, apply and evaluate comprehensive career guidance programs into classroom management practice.

D0537 Instructional Media Applications (2/0): This course outlines various forms of instructional media and explores the advantages and weaknesses of different media. It requires students to design and develop instructional media and then demonstrate them.

D0538 Emerging Learning Technologies Applications (0/2): This course introduces new technology applications in education. Topics include new technology trends, digital natives, digital games, virtual world, mobile learning, flipped classroom and MOOCs, etc.

D0539 Topical Seminar in Educational Issues (2/2): This course introduces several critical topics in education. Topics include environmental education, financial education, ocean education, art education, media literacy education, multicultural education, etc.

D0540 Field Experience at Secondary Schools (0/0): This course provides various opportunities for students who are also future teachers to observe, participate and practice teaching skills in real
educational environment. To fulfill the requirement of this course, certain criteria are held according to
regulations of The Center for Teacher Education.

D0552 Chemistry Instructional Materials and Methods (2/0): This course aims to help students
learn to design subject-specific lessons with informed knowledge about their students and methods.

D0553 Chemistry Instructional Practicum (2/0): In this course, students’ pedagogical content
knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0554 Russian Instructional Materials and Methods (2/0): This course aims to help students learn
to design subject-specific lessons with informed knowledge about their students and methods.

D0555 Russian Instructional Practicum (2/0): In this course, students’ pedagogical content
knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0556 Japanese Instructional Materials and Methods (2/0): This course aims to help students learn
to design subject-specific lessons with informed knowledge about their students and methods.

D0557 Japanese Instructional Practicum (2/0): In this course, students’ pedagogical content
knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0570 Remedial Instruction (0/2): This course introduces principles and practices of remedial
instruction. With a focus of learning by doing, this course aims to improve preservice teachers’
knowledge and skills through remedial field experiences in real high school settings. Class observation,
group preparation, student teaching, after-class discussions and reflections are the core learning
activities of this course.

D0571 Adaptive Instruction (0/2): Adaptive Instruction has been driven by a realization that tailored
learning cannot be achieved on a large-scale using traditional and non-adaptive approaches. Adaptive
learning endeavors to transform the learner from passive receptor of information to collaborator in the
educational process. This course includes the topical discussions of differentiated instruction, adaptive
learning theories and practices, as well as the various current ways of student-centered innovations.

D0572 Learning Assessment (0/2): This course provides knowledge and skills in learning assessment.
It requires students to develop different types of tests based on three domains, namely, cognition,
affection, and psychomotor.

T0145 Educational Psychology (2/0): This course introduces different theories of educational
psychology including behaviorism, humanism, and cognitive psychology. It also examines the
characteristics of teacher-student interaction in the process of teaching and learning.

D0540 Field Experience at Secondary Schools (0/0): This is a 54-hour non-credit prerequisite course
which aims to help prospective teachers learn about the process of instruction, reflect upon their
diverse experiences in real-life situations, and develop their knowledge and commitment to education.
CENTER FOR FUTURES INTELLIGENCE AND RESEARCH

Director: Mei-mei Song（宋玫玫）

The mission of the Center for Futures Intelligence and Research (C-FAR) is to promote futures studies through the provision of futures courses and foresight consultancy services to different sectors such as the industry, governmental agencies, educational institutions, and research units, so that futures thinking can be widely used in practice and contribute to enhancing a forward-looking mindset in Taiwan’s society.

With the increasing complexity and rapid changes in recent years, futures thinking is becoming indispensable and increasingly used as a high-level business and policy decision-making in many parts of the world. Tamkang University has embraced futures studies since the 1970s. In November 2015, the Center for Futures Intelligence and Research was set up to further facilitate the futures studies in all levels of society.
COLLEGE OF GLOBAL DEVELOPMENT
COLLEGE OF GLOBAL DEVELOPMENT

Dean: Cheng-hao Pao (包正豪)

Brief History
After more than ten years of planning and development, the Lanyang Campus of Tamkang University successfully passed the Ministry of Education evaluation in the spring of 2005. In the fall semester of the same year, the campus began accepting students and officially became one of TKU’s university campuses. Originally, Lanyang Campus consisted of three colleges: the College of Entrepreneurial Development, the College of Global Research and Development, and the College of Community Development. After five years of growth and development, in Fall 2010, the College of Entrepreneurial Development and the College of Global Research and Development merged to become the College of Global Entrepreneurial Development. In 2014, the name of the college changed to the current name: The College of Global Development. The college consists of four departments: The Department of Innovative Information and Technology, the Department of International Tourism Management, the Department of English Language and Culture and the Department of Global Political Economy. All departments are geared toward the development of the global spirit and capabilities, which is the college’s central mission.

The most unique feature of this college is that all the courses are conducted in 100% English. Moreover, the college requires all students to go abroad for their junior year of study. Along with its adoption of the “residential college” setup, the Lanyang Campus is in an ideal position to grow and develop well into the future.

Mottos and Goals
Tamkang University, Lanyang Campus: Establishing a new direction for higher education of Taiwan and grooming students with international perspectives and cross-disciplinary talent.

Future Development
The College of Global Development will continue to establish relationships with the local community and overseas partners and provide resources for students and alumni partaking in global entrepreneurial ventures. As part of the well-established institution known as Tamkang University, the Lanyang Campus shares the university’s core values, which helps to shape its distinctive intellectual culture. At the College of Global Development, we constantly put our ideas into practice, leading to numerous innovative expansions. In the future, more majors will consistently be added to enhance the overall standing of the academic program at Lanyang Campus.

Course Descriptions

H0002 International Etiquette (2/0): The general scope of this course will focus on the understanding of international etiquette as well as its practices. Issues like tipping, studying abroad, formal parties, dress code, and dining manners will be addressed throughout the semester. Also, wine tasting and ballroom dancing will be introduced and practiced during sessions. Students enrolled in this course will be asked to dress appropriately each session.

H0003 Global Technology Revolution (2/0): This course will require students to: (1) comment on the meaning and definition of the “Global Technology Revolution”; (2) explain how technology influences and reconstructs the entire world; (3) use allusions and examples to describe the development, application and management of technology in all its facets; (4) use group discussions and movie screenings to explore the relationship between humanity and technology.

A0502 English Writing (2/0): This course is designed for all freshmen in our college. It aims to develop students’ reading and writing ability, helping them to gain competency in critical thinking and communicative skills. Throughout the course, students can learn to live as a community of authors--immersed in writing and sharing our writing, reading and discussing our readings, listening openly and responding to each other’s ideas and points of view. This personal experience with language reading and writing, and reflecting on that experience, will form the core for the reading and writing sections of the course.
F0219 Reading Club (2/0): Students will learn some reading skills, such as identifying text structure, distinguishing between fact and opinion, perusing, skimming, and inferring meaning. Students are expected to develop and improve their reading ability through the training received in class.

H0005 Oral Communication in English (0/2): This course aims to improve students’ English communication skills. Students will learn how to prepare speeches and deliver speeches in class. As part of course evaluation, each student will be required to make a speech.

H0006 General English Proficiency Test (0/2): GEPT is gradually becoming a required certificate for everyone in the new language learning era. The purpose of this course is threefold: familiarizing students with the formats of IELTS and TOEFL at three levels, informing students about the differences between IELTS and TOEFL, and sharing test taking and preparation strategies.

A1376 Ability of Expression in Spoken and Written Chinese (2/0): Learning Chinese is a new global trend. The purpose of this course is to develop students’ logical thinking and expression in Chinese. Speaking and literary creation in Chinese, which is based on reading and writing, is important in helping to stimulate students’ creative intellect. Team presentations will also be incorporated to develop students’ abilities in communication and cooperation, based on the belief that Chinese culture promotes a humanistic spirit and human accomplishments.

E1034 Introduction to Computer (2/0): This course provides students with a basic understanding of computer science. Students will learn about hardware, programming, operation of application software, and networks and the Internet.

T2353 Introduction to Globalization (2/0): This is an introductory course which aims to familiarize students with the basic concepts and different dimensions of globalization. The first part of the course deals with the basic concepts of nature, characteristics and dimensions of globalization. The second part analyses the impacts of globalization on the states, economies and societies with special emphasis on the Asia-Pacific region.

V0049 Business Essentials and Entrepreneurial Management (0/2): This course introduces topics related to starting an enterprise, such as business responsibilities, entrepreneurship, ownership types, operations management, human resources management, marketing management, and leadership and finance management. At the same time, this course will invite experienced business managers and entrepreneurs to share ideas about creating a business. Students are required to attend separate groups and make business plans and take part in an entrepreneur competition. After completing this subject, students are expected to possess the basic skills required to create and manage a business.

O0004 The Law in Life Curriculum (2/0): As human beings, we could not live without laws in our daily life. Therefore, this course is designed to help students develop the correct attitude toward legal systems. Civil law, among them, is especially highlighted, since it has more to do with people’s daily lives.

F0371 Advanced English (0/3): This course aims to enhance students’ upper-intermediate to advanced English skills. It focuses on the learner and requires students to participate in tasks such as presentations, discussions, writing exercises and reading sessions.
DEPARTMENT OF INNOVATIVE INFORMATION
AND TECHNOLOGY

Degree Offered: B.S.

Chairman: Shih-Jung Wu (武士戎)

The Department
The Department of Innovative Information and Technology (IIT) was established in August 2009, and continues to provide four-year undergraduate students with both theoretical knowledge and practical expertise on not only the integration of information systems and applications but also software development. Our curriculum focuses on two major fields: software engineering and applied informatics. The new department strives to further the development of intelligent information theory and technology and its successful innovative applications on business and industry. In addition to the innovative, reliable, and integrated technological solutions, quality services, and information resources, the primary mission of this department is to provide students a basic understanding of the principles of the discipline, as well as the norms of a responsible citizen. Therefore, the department emphasizes the importance of a complete education, not just the training of high-level computer-related professionals.

The goal of this department is to pursue excellence and high quality in holistic education and practice, and to equip students with global vision, professional skills, attitudes, and values in the area of innovative information technology. This department also aims to prepare students for careers as leaders and pioneers in their professions and researches. Graduates are expected to be adept at using the latest information technologies and to be qualified to pursue careers as beginning information managers in a variety of organizations.

Faculty

Professors
Shih-Jung Wu (武士戎)

Associate Professors
In-ho Lin (林銀河); Huang-wen Huang (黃煌文); Feng-Cheng Chang (張峯誠);
Lin Hui (惠霖)

Assistant Professors
Liou Chu (朱留); Duen-Kai Chen (陳惇凱); Fu- Yi Hung (洪復一)

Degree Requirements

Requirements for a degree of B.S.:
Completion of 128 credits of courses, including 76 credits of required courses and 52 credits of elective courses. Students need to study abroad in the junior year.

Course Descriptions

E0594 Program Design (3/0): This course introduces the concepts of programs and flows, from which students learn how to represent a solution in a procedural style and implement this into Python and C.

M0724 Object Oriented Programming (0/3): C++ is a popular object-oriented programming language for large-scale software development. It is flexible in that both high-level and low-level syntactic features are supported. We will learn C++ by drawing on various kinds of examples, and focus on solving practical problems in the OO approaches.

S0325 Calculus (3/0): This course provides instruction on basic calculus, with examples and practical applications of theories to help students establish a foundation for future advanced courses.
S0439 Linear Algebra (0/3): The current course introduces linear algebra as a fundamental mathematical concept and a tool to further courses. Cases will be introduced to present the connection to daily applications as a foundation of further study.

S0450 Introduction to Probability Theory (0/3): The current course introduces the probability theorem as a fundamental mathematical concept and a tool for understanding more advanced courses. Cases will be introduced to present the connection of the theorem to daily applications as a foundation for further study.

S0487 Discrete Mathematics (3/0): This course familiarizes students with discrete mathematics, which is an important fundamental knowledge in computer science and software engineering. It will further help students to understand major topics and functions in discrete mathematics.

E0175 Operating Systems (0/3): The purpose of this course is to describe the theory of operating systems. It concentrates on each of the “managers” in turn and shows how they work together. Then it introduces network organization concepts, security, ethics, and management of network functions. In the second half of the semester, we will introduce actual operating systems, how they apply the theories presented in the first half and how they compare with each other.

E0646 Database Systems (0/3): This course is designed to provide individuals with a complete introduction to database concepts and the relational database model. Upon completion of the course, students should be able to understand a user’s database requirements and translate those requirements into a valid database design.

M0171 System Analysis and Design (0/3): This course starts with an introduction of fundamental concepts, philosophies, and trends that provide the context of systems analysis and design methods, followed by systems analysis and its overall importance in a project. It offers specific system analysis skills with an emphasis on logical system modeling.

M0490 Network and Communication (0/3): The goal of this course is to give students a superior foundation in network communications and a focus on the OSI seven layers’ model.

E0651 Data Structure & Processing (3/0): This course incorporates C programming language to solve special problems for applications and computers. It emphasizes data storage, fetch, algorithm design and complexity evaluation.

E1111 Algorithms (0/3): This course provides an introduction to the design and analysis of algorithms. Course topics include: Fundamentals of the Analysis of Algorithm Efficiency, Divide-and-Conquer, Decrease-and-Conquer, Transform-and-Conquer, Space and Time Tradeoffs, Dynamic Programming, Greedy Technique, Iterative Improvement.

V0067 Practice of Projects (3/0): This course will involve a number of different teams with several students each that will work to complete a research project on certain specific topics.

E0521 Software Engineering (3/0): Combining the fundamental knowledge of information systems and the experience of programming, this course teaches students how to develop high quality software using an engineering approach.

V0005 Practices in Management of Information and Communication TEC (3/0): This course introduces the infrastructure of information and communication technology management systems and related management theories and practical applications. Through group projects, reports, and expert lectures on the information and communication technology industry, we will introduce the current situation and future of the industry so that students may learn about practical future trends in the ICT industry.

D0331 Practicum in Educational Technology (0/9): To obtain the necessary information expertise and practical experience through an internship of Enterprise. To develop positive attitudes and professional ethics. To promote the capabilities of teamwork and interpersonal communications.
DEPARTMENT OF INTERNATIONAL TOURISM MANAGEMENT

Degree Offered: B.B.A.

Chairman: Dr. Chien Mu Yeh (葉劍木)

The Department

The Department of International Tourism Management is a key component in Tamkang University’s (TKU) development. A significant amount of resources has been devoted to its establishment. The decision for this large investment was made after carefully considering TKU’s vision for the future. After the opening of the Hsuehshan tunnel in 2006, currently the fourth longest tunnel in the world, Yilan has attracted increasingly larger numbers of residents. Yilan County has undergone a process of long-term planning, and construction is under way to develop Yilan into a tourist haven. Soon, tourism will be the major industry in Yilan. TKU also planned extensively prior to establishing this department. As a location, beautiful Yilan provides the department with plenty of practical tourism resources. At the same time, the Department of International Tourism Management will also do its best to give back to the local Yilan community.

As the tourism market in Yilan expands, its tourist infrastructure is gradually growing. It will soon be capable of serving international customers. This foundation, coupled with the TKU’s triple objectives of “globalization, information-oriented education, and future-oriented education”, has ensured that the Department of International Tourism Management is standing on firm ground, with all of its courses delivered in English, and a junior year abroad program for all its students.

This department provides professional training in the management of tourism businesses. Our students are required to carry out a 400 hour internship before graduating. We also emphasize the acquisition of advanced concepts and the importance of innovation in operating tourism businesses, in accordance with the current trend of knowledge economics. We firmly believe that our students will be capable of managing tourism businesses with a globalized view.

Faculty

Associate Professors
Pin-Ju Juan (阮聘茹); Chien Mu Yeh (葉劍木); Chioou Shu-Chuan Chen (陳淑娟)

Assistant Professors
W. Jasmine Chen (陳維立); Shan-Ju Christine Chi (紀珊如); Wei-Hsiu Lin (林偉修)

Specially Appointed Assistant Professor
I-Hsuan Shih (施依萱)

Degree Requirements

Requirements for a degree of B.B.A. in International Tourism Management:
Completion of 128 credits in courses, including 80 credits of required courses and 48 credits of elective courses. Students need to study abroad during their junior year and obtain one tourism-related license. Completion of 400 hours of internship is also required. Students must satisfy one of the following English requirements: TOEFL iBT80 or, IELTS overall 6.0.

Course Descriptions

B0302 Economics (3/0): The course introduces the basic concepts and methodology that we use in modern economic analysis. These tools will help students better understand a wide range of phenomena from the standpoint of economics. The course material is structured into Microeconomics and Macroeconomics. Students will also learn how to apply microeconomics principles to a wide variety of real world situations in both their personal and professional lives. They will develop a better understanding of national economic performance and the potential and limits of economy policies.
M0271 Financial Management (3/0): This subject is designed to teach the main concepts of financial management, such as financial statement analysis, time value of money, interest rate, risk, return and investment decision making. Students are expected to have abilities to manage finances of firms and individuals.

M0405 Management (3/0): The course offers students not only theoretical frameworks that guide managerial activities, but also illustrations and examples of how and when those theories may work. The course will consider both small and large businesses as well as nonprofit organizations.

M0517 Statistics (0/3): The objective of this course is to provide the students with the essential and fundamental concepts of elementary statistics. This course will focus on understanding and applying statistical concepts and techniques to a wide selection of real problems and on interpreting and communicating the results of a statistical analysis. It emphasizes that statistics is used as a tool in decision-making in areas of management sciences.

M0518 Accounting (0/3): The essential purposes of accounting are to report a company’s financial conditions, operating results, and changes of financial status. This course design aims at leading students to understand the logics behind accounting, to learn the accounting process, to prepare financial statements, and to capture key concepts of financial analysis.

P0004 Introduction of Tourism Development (3/0): This subject is designed to enrich students’ understanding of tourism knowledge, including the tourism industry, tourism marketing, quality service, service providers, transportation, accommodations, hospitality, and destinations. The economic, political, environmental, social and culture impacts on tourism are also discussed.

P0020 Consumer Behavior in Tourism (0/3): The purpose of this course is to introduce consumer behavior theory and practice. Major contents include the following are describing consumer decision process model, understanding what major psychological processes to the marketing program, understanding how consumers make purchasing decisions, and learning how marketers analyze consumer decision making.

P0021 Tourism Administration and Law (0/3): This course introduces the laws and policies in tourism and hospitality industry in Taiwan. The Students are expected to deeply understand the rationale for these laws, regulations and policies.

P0022 Tourism Geography (0/3): Tourism geography explores a wide range of interests including the environmental and cultural impacts of tourism, and the geographies of tourism and leisure economies. It aims to answer concerns relate to tourism industry and management challenges.

P0050 Tourism Industry Internship (0/2): “Learning from doing” is a good method to combine both theory and practice. This course allows students to experience tourism and hospitality related industries including hotels, restaurants, travel agencies etc. from a practical standpoint. Students can bring those skills which they learn in class, and put it to practical use in the field. In class, discussions will examine the differences that exist between theory and practice. The practical experience will be helpful for future career prospects within the tourism and hospitality industry.

V0010 Hotel Management and Operation (3/0): The purpose of this course is to provide guidance to students who are looking for a future career in the hospitality industry. Knowledge of the hotel history leads to a better understanding of the present. The introduction of the function of every department at the hotel, such as front office, housekeeping, engineering, food and beverage, sales and marketing, and human resources, will help students develop an overall perspective of hotel operation. Besides being an introduction to the hospitality industry, managerial skills such as communication and interpersonal skills will also be discussed.
DEPARTMENT OF ENGLISH LANGUAGE AND CULTURE
(English-Taught Program)

Degree Offered: B.S.S.

Chairman: Ivy Haoyin Hsieh (謝顥音)

The Department
The department is one of the four departments in the College of Global Development which is the sole college located on Lanyang Campus in Yilan County. The department admitted its first group of students back in 2005 under the name “Department of Multiculturalism and Linguistics”. In 2012, the department underwent several changes, including revision of its curriculum and changing the name to the “Department of English Language and Culture”.

Despite those changes, the department has maintained its commitment to extensive language and cultural training. Therefore, from the inception of the department, all courses have been taught in English and the department has mandated that every local student in the department needs to study abroad in our sister universities during their junior year. Being able to speak English is not enough in today’s increasingly globalized world. Therefore, our courses also focus on developing qualities of the liberal arts, including appreciating culture and acquiring critical thinking abilities with particular reference to multicultural issues. Students will learn diversified cultural knowledge of the selected foreign countries and practice applying multicultural concepts, theories and analytical tools in conducting cross-cultural communication.

Features
1. To prepare students to achieve intermediate competency in a modern foreign language.
2. To assist students to develop fluent and accurate oral and written expression, and the ability to easily communicate cross-cultural issues.
3. To prepare students to acquire and apply the skills of the liberal arts, including reading and listening comprehension, oral and written communication, and critical thinking, with particular reference to multicultural and language issues and analyses.
4. To educate students with professional knowledge in areas such as linguistics, literature and culture, in order to develop cross-cultural perspectives.
5. To help students develop the ability of applying multicultural concepts, theories and analytical tools to communication on foreign affairs.

Career Development
1. Students may choose to continue their studies in either domestic or foreign graduate programs to obtain Master or Doctoral degrees. Programs include but are not limited to (multi-) cultural studies, Communication, Linguistics, Literatures, Translation, and English for specific purposes.
2. Students may develop their career in fields such as British or American culture and educational studies, translation, writing, tourism, journalism, secretarial administration, international trade, mass communications, and others.

Faculty
Associate Professor
Yi-Chin Shih (施懿芹); Song-Ling Chyi (齊嵩齡); Ivy Haoyin Hsieh (謝顥音)

Assistant Professors
Wei-Ting Jannette Wang Gutierrez (王蔚婷); Yen-Chen Chuang (莊晏甄);

Specially Appointed Assistant Professor
James Callow (柯建恩)
Degree Requirements
Completion of 128 credits of courses, including 66 credits of required courses and 43 credits of elective courses; Minimum Credits of Elective Courses required by the department: 19 credits; one year of overseas study for English and professional training.

Course Descriptions

H0083 Travel Literature (3/0): What is “Travel Literature”? Travel Literature is a fashionable contemporary genre that couples actual travel experiences with creative and literary writing. Travel writers record people, events, sights, and feelings involved in their personal travel experience and relate these in an interesting and sometimes humorous manner. It is more than just documenting adventures and more than the mere recording of dates, names and events; it should also include insights, values, and form a coherent narrative.

A3574 Introduction to Cultural Analysis (2/0): This course will introduce students to concepts and methods in the interdisciplinary field of Cultural Studies. Our aim is both to gain an understanding of Cultural Studies as a conceptual framework or field of study, and to employ its tools in the analysis of a broad range of examples, ranging from social justice activism to cultural institutions to everyday practices and popular culture.

P0010 Integrated Reading (2/2): This course is designed for freshman English-majors. It provides instruction in reading and writing, and aims to enhance students’ abilities to think critically and communicate in English. Throughout the course, we will learn to live as a community of authors--immersed in the process of writing and the sharing of our writing, reading and discussing our reading, listening openly and responding to each other’s ideas and points of view.

P0012 Integrated Writing (2/2): This course is designed for freshman English-majors. It provides instruction in reading and writing, and aims to enhance students’ abilities to think critically and communicate in English. Throughout the course, we will learn to live as a community of authors--immersed in the process of writing and the sharing of our writing, reading and discussing our reading, listening openly and responding to each other’s ideas and points of view.

P0014 Selected Readings in English and American Literatures (2/2): This one-year course focuses on several definitive literary works in English and American literature in the period between the 18th and 20th centuries. Topics covered include: developments in narrative technique, their relation to history, national versus linguistic definitions of “English” and “American” literatures, social criticism in literary works, and the construction of subjectivities, among others.

P0017 English Presentation (3/0): The course aims to improve students’ oral ability and help students deliver high quality presentations. Students will learn oral skills, such as how to begin a presentation, how to organize presentation materials, and how to prepare for a presentation.

A0318 Introduction to Western Literature (3/0): This course introduces basic ideas related to Western literature: genre and historical context, style and theme (or form or content) to help students analyze and appreciate how literary texts convey their meanings in their time. We read a selection of interesting texts: epics, plays, poems and novels (original or translated excerpts), with supportive materials such as leading questions, some research papers and related websites to stimulate classroom discussions and further students’ understanding of this field.

H0016 Introduction to Multiculturalism (2/0): This course develops students’ knowledge on issues affecting public schools and society in general. It will emphasize diversity to help students better understand the intellectual, social, physical, and emotional characteristics of persons of different ages, languages, cultures, races, social classes, and educational backgrounds.

A0159 Approaches to the Study of Literature (0/2): This class helps students understand the basic genres of literature, including short stories, drama and poetry. Students are expected to develop critical and independent thinking through analyzing literary works.

A0685 English News Writing (0/3): This course aims to help students develop knowledge and skills to understand and analyze news articles in current English-language newspapers.
T2305 English Contemporary Studies (3/0): Reading English news has many benefits for language learners. It can help us improve our reading ability, learn more vocabulary and let us know what has happened in the world. This course aims to develop students' reading comprehension and cultural understanding through reading numerous selections of news in English.

P0046 Introduction to Translation (2/0): Based on the translation of a variety of texts (magazines, newspapers or literary essays), this course compares linguistic differences of English and Chinese (terminology, syntax, usage etc.), and helps students perceive some cultural differences behind the linguistic devices.

P0056 Practical English Writing I (2/0): This course aims to help students develop practical skills in various forms of writing, including English autobiographies, resumes, business correspondence, school admission applications, thesis abstracts, and editorials.

P0057 Practical English Writing II (0/2): This class focuses on an introduction to academic writing. Students are expected to produce well-organized and developed paragraphs and essays through the writing process.

A2675 Graduation Project (2/2): This is a required class for graduating seniors. Students complete work in their chosen format (film or video production, thesis writing, or other creative work related to Multicultural and Linguistic Studies), then present their work to the public.

P0048 Multicultural and Society (0/2): This introductory course will give you an understanding of the basic principles of Sociology as an academic discipline and provide an analytical perspective of society and everyday life through sociological theories. You will learn to analyze the ways in which people interact and function in groups. It is a practical as well as theoretical study which includes such subjects as culture, values, norms, social stratification, race and ethnicity, conformity, deviance, urban living, social change, and social movements.

D0330 Gender and Culture (2/0): Students will be introduced to the interdisciplinary field of Gender Studies through a variety of feminist texts, including theoretical essays, short stories, and videos. Through close readings of assigned texts and engaged discussions, students will explore the ways in which gender, race, sexuality, and class interconnect in the social construction of identities and experiences. This course is designed to prepare students to become active and responsible citizens within their local, national, and world communities.

P0019 English for International Conferences and Meetings (0/2): This course aims to familiarize students with activities and English expressions relating to international conferences and meetings. Students will develop competency for serving in different roles at conferences and meetings.

A0377 Greek and Latin Mythology (3/0): This course provides an introduction to Greek mythology and other related myths (Norse mythology and medieval romance). Students will study not only the representation of mythology in Greek art/literature, but also the influence of Greek culture on later periods, such as Richard Wagner and Nietzsche in Romanticism. Tales may include the Theban saga, *Iliad, Odyssey*, the twelve Olympians, legends of early Rome, *Der Ring des Nibelung* and *Tristan & Isolde*.

H0183 Popular Literature and Culture (2/0): This course gives students a broad introduction to key themes in British and American popular culture. Its central focus will be the development of post-war popular music and its synchronous youth culture, exploring how the content and imagery of pop culture has shaped social history, generating a cross-fertilization of ideas and imagery that has impacted on many aspects of media and society, from cinema and fashion to gender and politics. Themes explored include British and American interaction, race, rebel culture, authenticity, and consumerism.

P0045 English for Advertising (0/3): This course teaches the basic marketing concepts and vocabulary required to speak about marketing and related fields. It is designed to help those who want to work in marketing and need to use English.
DEPARTMENT OF GLOBAL POLITICS AND ECONOMICS
(English-Taught Program)

Degree Offered: B.S.S.

Chairman: Cheng-hao Pao (包正豪)

The Department
The Department of Global Politics and Economics was established in 2005. It offers integrated courses on international political economy and regional political and economic developments. To assist in implementing TKU’s policy of globalization, all the courses in the Department are taught in English. Faculty members all possess PhDs and are qualified to conduct lectures in English. Among them, 50% are foreigners, coming from Malaysia, Singapore, France, Germany, and Poland.

Apart from a junior year abroad scheme, the Department also has an overseas internship program called “Global Service Internship Program” (GSIP). The Department will select and send qualified students to NGOs in Southeast Asian countries to have a four-week internship. Through this program, we make our students knowing more about Southeast Asia.

Faculty
Professor
Cheng-hao Pao (包正豪)

Associate Professor
Frank Varga (馬為騰); Reinhard Biedermann (鄧盛鴻); Anna Rudowska (安娜)

Assistant Professors
Ying-lung Chou (周應龍); Kar Yen Leong (梁家恩)

Specially Appointed Assistant Professor
Chih-Wei Chou (周志偉)

Degree Requirements
Requirements for a degree of B.S.S. in the Department of Global Politics and Economics:
Completion of 128 credits of courses, including 64 credits of required courses, minimum 19 credits of elective required by the department and 33 credits of elective courses, and one-year study abroad for English and professional training.

Course Descriptions
T0130 International Relations (2/0): The general scope of this introductory course will primarily focus on the consideration of both basic concepts and key issues in the field of international relations. Critical subjects such as power politics, foreign policies, international conflict, the role of force, trade, money and business, integration, environment will be examined accordingly throughout the semester.

B0305 Principles of Economics (3/0): Economics is the study of how society manages its scarce resources. Economists study how people make decisions and interact with one another, but they also analyze forces and trends that affect the economy as a whole. There are many reasons you should embark on the study of economics. Let’s just mention the three main ones:
- Better understand the world in which you live
- Become a more astute participant in the economy and make better decisions
- Get a better understanding of both the potential and the limits of economy policy

H0031 Research Methods (3/0): This course will provide an introduction to research methodology and a basic framework to critically evaluate social and behavioral science research. Students will be exposed to and tested on the major concepts and methods for generation hypotheses and designing a multi-measure study. This course should enable students to do social science research.
H0136 Politics I (2/0): This course introduces the study of political life by providing an overview of a discipline described variously as political studies, political science, government, or politics. We will also examine essential concepts such as governments and governing, political systems, regimes, political ideologies, democracy, and political parties. Since politics affects almost everything we do, the purpose of this course is equally broad: from the socio-political world around us, to clarifying students’ political beliefs and attitudes.

P0023 Politics II (0/2): The objective of this course is to offer the fundamental understanding of political concepts and theories together with some relevant experimental lessons. It has been designed to focus on the insight of Nations and Nationalism, Global Politics, Representation, Elections and Voting, Parties and Party Systems, Constitutions, the Law and Judiciaries.

M0310 Statistics (I) (2/0): This course intends to introduce some basic knowledge of statistics to the student of Dept. of Global Politics and Economics.

M0311 Statistics (II) (0/2): This course provides a basic understanding of statistics, with particular emphasis on practical training in SPSS.

M0674 Political Economy (3/0): The intersection of politics and economics raises questions and sparks conflicts about the fundamental issues of politics: freedom, security, order, sovereignty, fairness and democracy. We will compare and contrast political and market solutions to collective problems; the politics of economic crises; and corporation and labor in the political economy.

B0373 Intermediate Macroeconomics (0/3): Macroeconomics is concerned with the big economic well-being. Each of these issues involves the overall economic performance of the nation. Key concepts of Macroeconomics are: unemployment, inflation and productivity. As Microeconomics, Macroeconomics play a big role in politics too.

H0154 Introduction to International Law (0/2): The purpose of this course is to equip students with essential knowledge on international law. Subjects such as the law of nations, law of the international system, subjects of international law, recognition of states and governments, state responsibility, human rights, jurisdiction, dispute resolution, territory, law of the sea, international agreements, and diplomacy will be dealt with throughout the semester. Students are strongly encouraged to get familiar with reading assignments before attending classes. Students’ active participation will be noted as a plus in their final grades.

T1064 Comparative Politics (0/3): In this course you will not only engage in a broader global comparison of government in different regimes around the world, but also learn about some major concepts in the study of comparative politics. The case studies of American, British, French, and German governments will be utilized in this course.

P0064 International Political Economy I (2/0): International Political Economy is the study of relations between international politics and international economics. The main objective of this course is to familiarize students with the dynamic connections between states and markets in a regional and global context. This course mainly focuses on analyzing the concepts, theories and approaches in the study of International Political Economy.

P0065 International Political Economy II (0/2): The aim of this course is to provide students with knowledge of both theories and practical case studies (mainly from the US, EU and the G20) for IPE (International Political Economy). The course consists of the following topics: global trade, global production, global capital, global finance, global development, global environmental issues, global governance, global regimes, and finally issues and challenges facing global governance in the context of the changing regional and global political economy.

P0066 International Organizations I (2/0): The purpose of this course is to help students examine the fundamental working principles of international organizations since their inception. Efforts will be made to review the early stages of the development of international organizations. The creation and dissolution of the League of Nations will be critical for students to comprehend the difficulties and dilemmas involved in operating international organizations. Special attention will be devoted to issues...
surrounding the United Nations.

**P0067 International Organizations II (0/2):** The focus of this course includes IGO, NGO, and MNC and their governance models. The instructor of this course will utilize a case study approach to help students appreciate fundamental concepts and operations of international organizations.

**B0230 International Economy (0/3):** Events in the global economy have more influence over national policies and political debate than ever before. Globalization has arrived. International trade in goods and services has expanded in transaction costs, negotiated reductions in trade barriers or a widespread outsourcing of production activities. Studying International Economics is certainly the best way to understand the existing issues that dominate the actual economic and political debates.

**B0130 Intermediate Microeconomics (0/3):** A good grasp of microeconomics is vital for managerial decision making, for designing and understanding public policy and, more generally, for appreciating how a modern economy functions. Microeconomics deals with the behavior of individual economic units. For example, microeconomics explains how consumers make purchasing decisions and how their choices are affected by changing prices and incomes. It also explains how firms decide how many workers to hire and how workers decide where to work and how much work to do.
## APPENDICES

### APPENDIX A:

**TAMKANG’S SISTER UNIVERSITIES**

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**Asia**

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|         | India          | Chandigarh University                       | 2016/12/30            |
|         | Indonesia      | Gadjah Mada University                      | 2004/03/23            |
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|         | Indonesia      | Universitas Indonesia                       | 2017/07/21            |
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APPENDICES
APPENDIX B: UNIVERSITY PUBLICATIONS

Tamkang University’s publication program supports faculty and student research. University publications include:

**Journal of Applied Science and Engineering (JASE; ISSN 1560-6686)**

*JASE* is a quarterly international journal listed in COMPENDEX PLUS (EI) and Scopus. It changed name from Tamkang Journal of Science and Engineering (TKJSE) in 2012. The first issue was published in July 1998. *JASE* aims to serve the needs of the research and development community and to become a well-known international journal publishing papers of highest quality in all disciplines of applied sciences and engineering. All the published papers can be freely accessed via the website (jase.tku.edu.tw). *JASE* is submitting to ISI Thomson for Science Citation Index (SCI expanded), and its on-line paper submission is supported by ScholarOne Manuscript of Thomson Reuters.

**The Journal of Educational Media & Library Sciences (JoEMLS)**

*JoEMLS* published by the Tamkang University Press and co-published with the Department of Information & Library Science (DILS) and Chueh Sheng Memorial Library, was formerly the *Bulletin of Educational Media Science* (March 1970-June 1980) and the *Journal of Educational Media Science* (September 1980-June 1982). In 2015, The JoEMLS was acknowledged as an A class scholarly journal in Taiwan by the Ministry of Science and Technology (MOST). Since November 2016, the JoEMLS has been changed from quarterly to a tri-annual journal, published in March, July and November. The JoEMLS is an Open Access (OA) Dual, double-blind reviewed and international scholarly journal dedicated to making accessible the results of research across a wide range of Information & Library-related disciplines.

The JoEMLS is indexed or abstracted in Index to Chinese Periodicals, Chinese Electronic Periodicals Service (CEPS), Taiwan Humanities Citation Index (THCI), Scopus, Directory of Open Access Journals (DOAJ), Library, Information Science & Technology Abstract (LISTA), Library & Information Sciences Abstracts (LISA), Library Literature & Information Science (LLIS), Public Affairs Information Services (PAIS), Ulrich’s Periodicals Directory, H.W. Wilson Database, Scopus, and Taiwan Social Sciences Citation Index (TSSCI).

**Tamkang Journal of Mathematics**

*Tamkang Journal of Mathematics,* published by the Department of Mathematics, accepts original papers in mathematics. The publication began in 1970 as a semi-annual periodical that provides a forum for scholarly exchanges of ideas in mathematics, and is the first such international journal in Taiwan. It became a quarterly journal in 1985, with its four issues released at the end of March, June, September and December. Articles published in the *Tamkang Journal of Mathematics* cover diverse mathematical disciplines, and submissions come from all over the world. All articles are subject to peer review from an international pool of referees, and the current backlog is approximately nine months. *The Tamkang Journal of Mathematics* is indexed by Math. Review, Zentralblatt Für Mathematik und ihre Grenzgebiete, and other review/compilations. It also has exchange arrangements with about 250 journals or institutions.
The International Journal of Information and Management Sciences
The International Journal of Information and Management Sciences (IJIMS) is published by the Department of Management Sciences. The Journal was first published in 1990. It is an extension of two journals, namely, the International Journal of Policy and Information (1980-1988) and the Tamkang Journal of Management Sciences (1982-1989), both of which were published by Tamkang University. IJIMS focuses on topics such as information, management sciences, operation research, decision theory, system theory, statistics, and business administration and finance. It involves not only numerical computations or statistical simulations, but also applications of decision support systems, expert systems, knowledge-based systems, artificial intelligence, etc. IJIMS aims to elucidate policymaking processes, with an emphasis on its applications, especially on policy aspects of information management technology. It also explores the contributions and implications of knowledge-based models in the study of socio-economic systems, develops applications of computer-process databases and knowledge-based models to policy analysis, and integrates the coupling of these various systems intelligently into particular communities. Another aim of this journal is to provide a forum for researchers who attempt to quantify research findings or formulate a quantitative model from qualitative data. The International Journal of Information and Management Sciences is cited in EI Compendex, INSPEC, SCOPUS, MathSci, Pascal, ZMath and Mathematical Reviews, and is submitting to ISI Thomson for possible inclusion in the Science Citation Index.

Tamkang Review
The English Department of Tamkang University publishes Tamkang Review, an international journal of comparative literary and cultural studies. It is a biannual publication released in June and December. Inaugurated in 1970, Tamkang Review is recognized as one of the leading scholarly journals in Taiwan. It is indexed in THCI Core, MLA International Bibliography, MLA Directory of Periodicals, and Scopus.

Tamkang Journal of International Affairs
Tamkang Journal of International Affairs, published by the College of International Affairs, is an interdisciplinary quarterly. Its main goal is to provide an open forum for scholarly research and inquiry on a wide range of topics related to international relations, regional and global security, foreign policy, the political and economic dynamics of states and cross-Taiwan Strait relations. It is indexed in Scopus and Airiti Library.
### Journal of Futures Studies
The Journal of Futures Studies is a globally-oriented, trans-disciplinary refereed journal. Its mission is to develop high-quality, futures-oriented research and thinking, based on the evolving knowledge base of Futures Studies/Foresight.

### Journal of Contemporary Accounting
*Journal of Contemporary Accounting* is published semiannually by the Department of Accounting and Tamkang Accounting Educational Foundation. The journal provides a forum for the publication of high-level theoretical and applied accounting manuscripts with academic significance in terms of their originality and contribution. Correspondence may be addressed to The Editor, *Journal of Contemporary Accounting*.

### Journal of Information Management—Concepts, Systems, and Applications
*Journal of Information Management—Concepts, Systems, and Applications* is published semiannually by the Department of Information Management. All articles are refereed with Chinese and English abstracts.
### Journal of Law and Political Science

*Journal of Law and Political Science*, published by the Department of Public Administration, provides a forum for theoretical discussion and practical experience exchange in an original format.

### Management Research

The journal was first published in 2001 by the Department of Business Administration. Scholars are encouraged to submit manuscripts on any aspect of business management. The journal adopts a highly rigorous and lengthy review process.

### Tamkang History Review

*Tamkang History Review*, first published in 1989 by the Department of History, is an annual open forum for the publication of research articles in all fields of historical studies.
Tamkang Journal of Chinese Literature

Tamkang Journal of Chinese Literature, first published in 1992 by the Department of Chinese Literature, is a semiannual publication with a focus on Chinese literature, intellectual history, bibliography, philosophy, etc.
APPENDICES
APPENDIX C: FACULTY

Blanco Pena, Jose Miguel, (Ph.D., U. of Navarra, Spain), Professor of Spanish
Boileau, Gilles, (Ph.D., U. of Paris IV, France), Professor of French
Brown, Iain Kelsall, (M.A., Queen's U., Canada), Assistant Professor of English
Burovtseva, Nataliya, (Ph.D., Moscow State Normal U., Russia), Associate Professor of Russian
Callow, James, (Ph.D., U. of Bath, UK), Specially Appointed Assistant Professor of English Language and Culture (English-Taught Program)
Chan, Hsiou-Jung, (Ph.D. Can., Kobe U., Japan), Lecturer in International Business
Chan, Li-Wei, (Ph.D., National Taipei U., Taiwan, ROC), Specially Appointed Assistant Professor of Public Administration
Chang, Bao-Guang, (Ph.D., National Chengchi U., Taiwan, ROC), Professor of Accounting
Chang, Ben-Hang, (B.A., Shih Hsin U., Taiwan, ROC), Specially Appointed Professor of Chinese Literature
Chang, Chao-Ching, (Ph.D., National Taiwan U., Taiwan, ROC), Associate Professor of Chemical and Materials Engineering
Chang, Cheng-Hsin, (Ph.D., Colorado State U., USA), Professor of Civil Engineering
Chang, Chia-Hsiung, (M.A., Arkansas State U., USA), Lecturer in Physical Education Instruction Section
Chang, Chia-I, (Ed.D., Stanford U., USA), Professor Emeritus of Educational Policy and Leadership
Chang, Chih-Yung, (Ph.D., National Central U., Taiwan, ROC), Professor of Computer Science and Information Engineering
Chang, Ching-Gwo, (Ph.D., Saint-Petersburg State U., Russia), Associate Professor of Russian
Chang, Chiung-Sui, (Ph.D., U. of Kansas, USA), Professor of Educational Technology
Chang, Chong-Ling, (M.A., Kyushu U., Japan), Associate Professor of Japanese
Chang, Chun-Hui, (Ph.D., National Taiwan U., Taiwan, ROC), Associate Professor of International Business
Chang, Chun-Tao, (Ph.D., Tamkang U., Taiwan, ROC), Professor of Statistics
Chang, Der-Wen, (Ph.D., U. of Texas-Austin, USA), Professor of Civil Engineering
Chang, Dian-Fu, (Ed.D., Columbia U., USA), Professor of Educational Policy and Leadership
Chang, Feng-Cheng, (Ph.D., National Chiao Tung U., Taiwan, ROC), Associate Professor of Innovative Information and Technology
Chang, Fu-Chang, (Ph.D., U. of Cologne, Germany), Associate Professor of European Studies
Chang, Henry Ching-Lin, (Ph.D., Polytechnic U., USA), Professor of Physics
Chang, Horng-Jinh, (Ph.D., Tamkang U., Taiwan, ROC), Chair Professor of Management Sciences
Chang, Hsiu-Chuan, (Ph.D., Kathol. U. Eichstätt-Ingolstadt, Germany), Assistant Professor of German
Chang, Hsuan, (Ph.D., Ohio State U., USA), Professor of Chemical and Materials Engineering
Chang, Hsuan-Pu, (Ph.D., Tamkang U., Taiwan, ROC), Assistant Professor of Information and Library Science
Chang, Jau-Shien, (Ph.D., National Taiwan U., Taiwan, ROC), Associate Professor of Information Management
Chang, Kuei-Chieh, (Ph.D., National Changhua U. of Education, Taiwan, ROC ), Associate Professor of Educational Psychology and Counseling
Chang, Kung-Hung, (M.A., Taipei Physical Education College, Taiwan, ROC), Associate Professor of Physical Education Instruction Section
Chang, Kuo-Lei, (Ph.D., U. of Paris III-Sorbonne Nouvelle, France), Professor of French
Chang, Li-Chiu, (Ph.D., National Taiwan U., Taiwan, ROC), Professor of Water Resources and Environmental Engineering
Chang, Mauh-Tsun, (Ph.D., U. of Navarra, Spain), Associate Professor of Spanish
Chang, Pao-Hsing, (Ph.D., U. of Pennsylvania, USA), Associate Professor of Water Resources and Environmental Engineering
Chang, Sheng-Hsiung, (Ph.D., National Taiwan U., Taiwan, ROC), Assistant Professor of International Business
Chang, Shin-Hao, (Ph.D., Liverpool John Moores U., UK), Assistant Professor of Computer Science and Information Engineering
Chang, Tzu-Shan, (Ph.D., Southern Illinois U.-Carbondale, USA), Assistant Professor of English
Chang, Wei-Lun, (Ph.D., National Chengchi U., Taiwan, ROC), Professor of Business Administration
Chang, Wu-Ueh, (Ph.D., National Chengchi U., Taiwan, ROC), Associate Professor of China Studies
Chang, Ya-Chi, (PhD, National Taipei U., Taiwan, ROC), Assistant Professor of Accounting
Chang, Ya-Fung, (Ph.D., U. of Illinois-Champaign, USA), Professor of Teacher Education
Chang, Ya-Mei, (Ph.D., National Tsing Hua U., Taiwan, ROC), Associate Professor of Statistics
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Chang, Yeong-Kang, (Ph.D., U. of Texas-Arlington, USA), Associate Professor of Aerospace Engineering
Chang, Yi-Bin, (Ph.D., U. of Texas at Dallas, USA), Assistant Professor of Public Administration
Chang, Ying-Hua, (Ph.D., National Central U., Taiwan, ROC), Associate Professor of Information Management
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Chao, Chun-Shan, (Ph.D., National Chengchi U., Taiwan, ROC), Professor Emeritus of China Studies
Chao, Hsiao-Wen, (Beijing Sport University, Bejing, China), Assistant professor of Physical Education Instruction Section
Chao, Louis Ron-Yaw, (Ph.D., Duke U., USA), Professor Emeritus of Computer Science and Information Engineering
Chao, Wei-Min, (Ph.D., Chinese Culture U., Taiwan, ROC), Professor of Chinese Literature
Chao, Yaly, (Ph.D., Ohio State U., USA), Honorary Professor of Mass Communication
Chen, Chao-Liang, (Ph.D., National Central U., Taiwan, ROC), Professor of Economics
Chen, Chen-Cheng, (Ph.D., Swiss Federal Inst. of Tech., Switzerland), Associate Professor of Architecture
Chen, Chien-Chang, (Ph.D., National Tsing Hua U., Taiwan, ROC), Professor of Computer Science and Information Engineering
Chen, Chien-Fu, (Ph.D., The Ohio State U., USA), Associate Professor of China Studies
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