The rapid expansion of higher education has promoted the development of equal education, transforming higher education, which was originally offered only to the elite, into a universal phenomenon. As a consequence, the goal of education is no longer confined to cultivating the elite. Tertiary institutions now respond actively to the demands of the general public, and it is thus vital for a university to be aware of its own historical legacy, cultural heritage and mission, and to define its future development. With its four campuses, including the Tamsui Campus, the Taipei Campus, the Lanyang Campus, and the Cyber Campus, Tamkang University in a span of sixty-four years has undergone four waves of major development: the Foundation Period, the Positioning Period, the Uplifting Period, and the Transformation Period. Within these four periods, Tamkang has grown from a regional junior college into the top comprehensive private university in Taiwan. Future development toward the Fifth Wave will shape Tamkang into a world-renowned university possessing high ideals and modern notions of innovation, a place which cultivates and nurtures talent, not only in a professional, academic sense, but also in the Five Disciplines of Education, including conduct, intelligence, physical education, teamwork, and beauty, in line with its mission of creating “Excellence with a Soul”. Only by continuously striving to improve can Tamkang create an even better future.

American educator, Barbara Miller, once pointed out that leading universities, in resolutely carrying out their missions, rely on the cooperation of an administrative team, which works to implement and carry out strategies and plans for development. This is precisely how Tamkang University operates. It has a strong administrative team that implements a range of dynamic strategies and incorporates four separate models of governance: the Collegial Model, the Bureaucratic Model, the Political Model, and the Market Model. Moreover, Tamkang’s educational ideology of ‘Three Circles and Five Disciplines of Education’, consisting of professional, core, and extracurricular curricula, has helped to shape Tamkang students into well-balanced young adults.

Despite Tamkang’s position as a leading Taiwanese university with a large administrative team, it must nevertheless be aware of the ‘Mathew Effect’. The Mathew Effect refers to the phenomenon in which renowned universities around the world gain an increasingly stronger foothold in the global market by virtue of their reputation. As a result, they enjoy ever-increasing resources as the gap between “leading” and relatively unknown universities continually grows.

To ensure that Tamkang University is among the world’s renowned universities, it must draw on the concepts proposed in Clark Kerr’s fifth edition of The Uses of the University. Kerr warns that in the Age of the Fox, typified by intense competition, change and transformation, universities must uphold their core educational values, propagate their traditions and cultural heritage, identify opportunities brought about by the times, be capable of integrating both internal and external resources, aptly adjust themselves to changes in the environment, and develop their unique characteristics; only then can they prevail in this global competition. Therefore, Tamkang University must perceive and adjust to global trends in higher education. In the spirit of the university motto “simplicity, truthfulness, firmness, and perseverance”, we must promote the deeper meaning of Tamkang culture, magnify the unique features of Tamkang University, and ensure that all Tamkangians redouble their efforts to establish a firm foothold at Tamkang University, hold the world in view, grasp the latest information, and create a brighter future by unwaveringly striding toward the Fifth Wave of development.

Clement C. P. Chang
Founder, Tamkang University
“Tamkang University’s greatest assets lie not in its campus grounds, buildings or costly books and facilities, but in the members of the Board of Trustees, who are wholeheartedly dedicated to school administration; the members of TKU staff and faculty who share not only the sweet but the bitter of school operations and instruction; the numerous alumni at home and overseas who are striving to promote Chinese culture and undertaking the great task of “constructing the Republic and thus forming the great Commonwealth” and, last but not least, all the students who are absorbed in academic research.”
Board of Trustees

Members of Tamkang University's Twelfth Board of Trustees.
From left to right: Sush-der Lee, Kun-yen Lee, Steve Lee, Charles C. Lin,
Polly S. Chang, Gregory K. H. Wang, Hong-shang Hong, Ching Nan Chen, Haydn H.D. Chen

Mei-lan Wang
Supervisor

James H. Chow
Secretary-General
Tamkang University was founded in 1950 as the first private institution of higher learning in Taiwan. With dedication, the university has grown through four major waves of development by observing the founding guidelines of simplicity, truthfulness, firmness and perseverance. The university pursues outstanding governance and academic excellence. Its campus space has extended from the Five-tiger Hills at the Tamsui Township to the Lin Mei Hill in Yilan County. Today as a comprehensive university, it has 4 campuses, 8 colleges, 18 doctoral programs, 46 M.A. programs, 23 Mid-career M.A. programs and 48 departments with a total of more than 27,000 students.

For several decades, Tamkang University has given emphasis to globalization, as well as information-oriented education and future-oriented education as strategies. It implements holistic education by emphasizing the “Three Circles consisting of professional, general education and extracurricular curricula as well as the Five Disciplines including conduct, intelligence, physical education, teamwork and beauty.” It sets the goal of cultivating students with 8 basic competencies: a global perspective, information literacy, a vision for the future, moral integrity, independent thinking, a cheerful attitude and health lifestyle, a spirit of teamwork and dedication, and a sense of aesthetic appreciation that helps conduct learning across disciplines. Moreover, Tamkang University’s credited student clubs and associations elevate students’ creativity, imagination and problem-solving abilities. It aims at equipping students not only with...
professional skills and expertise, but also excellence in soul. It values the refined integration of Asian and Western culture among students.

By its tireless efforts in the past 64 years, Tamkang University has won remarkable and distinct recognitions. TKU was awarded the 19th National Quality Award, and its campus received WHO’s Health and Safety Certification. It is the first university which has received the national “Distinguished Enterprises Environmental Protection Award” for three consecutive times. For 17 years in a row it is listed in Cheers Magazine as the top private university which nurtures “Most Desired University Graduates for Business and Industrial Sectors”. TKU was the only private university in Taiwan to have been ranked in a world survey by WRWU (Webometrics Ranking of World Universities). It was placed within the top 500 universities at 401st in the world and 8th in Taiwan.

Peering into the digital age of the 21st Century, higher education in Taiwan is faced with the challenge of a nationwide baby bust and intense global competition in educational resources. TKU is determined to surmount these challenges by adapting to the new age and further refining the existing culture of the university through innovative strategic planning. We shall faithfully implement total quality management, maximize teacher capabilities, deepen academic exchanges, strengthen academic research, pay more heed to student studies, aim at excellence in a thoroughly new environment, make better use of academic-industry partnerships, and upgrade international competitiveness.

We will abide by the Blue-Sea competition guidelines and will be keen to the Matthew Effect so as to cultivate top students and brilliant scholars for the globalized world. It is our earnest hope that TKU’s holistic educational cause will unceasingly aim at and sustain success, making it one of the top comprehensive universities in the world.

President Flora Chia-I Chang

Dr. Wan-chin Tai
Vice President for International Affairs

Dr. Jyh-horng Lin
Provost of Lanyang Campus
4 Distinct Campuses

**Tamsui Campus**

The Tamsui Campus was built with the goal of establishing a comprehensive research university, one that "creates knowledge." It now comprises 7 colleges, 43 departments, 46 masters programs, 23 Executive Master’s Programs, 18 doctoral programs, and 22 research centers, and has a total student enrollment of more than 27,000. The Tamsui Campus aims to become a “City of Intellect” by taking pioneering steps to advance the frontiers of scholarship and research.

**Taipei Campus**

The Taipei Campus focuses on continuing education. Instruction is oriented toward the practical and emphasizes both theory and practice in order to cultivate professionals with a unique educational background. The Division of Continuing Education comprises an In-Service Education Center, an Extension Education Center, Japanese, Chinese Language Centers, and a Professional License Training Center. In addition, its Office of Professional Studies is responsible for providing teaching and administration 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 City of Intellect

The Sea of Knowledge Navigator
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 sunset panorama. The Lanyang Campus places an emphasis on university-level studies. To enhance graduates’ ability to compete internationally, it adopts a three-fold approach to development: (1) Students gain global perspectives through the “Junior Abroad Program,” in which 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, 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 and around 800 students.

The Cyber Campus offers a learning environment that connects the Tamsui, Taipei, and Lanyang campuses to the rest of the world through the latest technology. It provides students the option of taking online executive master’s programs offered by the TKU Department of Educational Technology, the Graduate Institute of Asian Studies, and the Department of Information and Library Science. It also cooperates with University of Maryland, Université Jean Moulin-Lyon 3, Université de Nice (Sophia-Antipolis), Waseda University, Tokyo University of Foreign Studies, and other universities worldwide to provide 1,017 synchronous and asynchronous online courses, distance learning programs, and other related courses. There are currently 66,027 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.
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</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>Polly S. Chang</td>
</tr>
<tr>
<td>Secretary-General of the Board of Trustees</td>
<td>James Hsin-min Chow</td>
</tr>
<tr>
<td>President</td>
<td>Flora Chia-I Chang</td>
</tr>
<tr>
<td>Vice President for Academic Affairs</td>
<td>Huan-chao Keh</td>
</tr>
<tr>
<td>Vice President for Administrative Affairs</td>
<td>Yi-jen Hu</td>
</tr>
<tr>
<td>Vice President for International Affairs</td>
<td>Wan-chin Tai</td>
</tr>
<tr>
<td>Provost of Lanyang Campus</td>
<td>Jyh-horng Lin</td>
</tr>
<tr>
<td>Secretary-General</td>
<td>Ting-chi Hsu</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>Sinn-cheng Lin</td>
</tr>
<tr>
<td>Dean of the College of Science</td>
<td>Bo-cheng Wang</td>
</tr>
<tr>
<td>Dean of the College of Engineering</td>
<td>Chii-dong Ho</td>
</tr>
<tr>
<td>Dean of the College of Business &amp; Management</td>
<td>Chien-liang Chiu</td>
</tr>
<tr>
<td>Dean of the College of Foreign Languages and Literatures</td>
<td>Hsi-deh Wu</td>
</tr>
<tr>
<td>Dean of the College of International Studies</td>
<td>Kao-cheng Wang</td>
</tr>
<tr>
<td>Dean of the College of Education</td>
<td>Dian-fu Chang</td>
</tr>
<tr>
<td>Dean of the College of Global Development</td>
<td>Ay-hwa Andy Liou</td>
</tr>
<tr>
<td>Position</td>
<td>Name</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Executive Director of the Division of Continuing Education</td>
<td>Chiu-chuan Wu</td>
</tr>
<tr>
<td>Dean of Physical Education</td>
<td>Shu-feng Hsiao</td>
</tr>
<tr>
<td>Director of the Office of Military Education &amp; Training</td>
<td>Kuo-liang Chen</td>
</tr>
<tr>
<td>Dean of Academic Affairs</td>
<td>Tung-wen Cheng</td>
</tr>
<tr>
<td>Dean of Student Affairs</td>
<td>Chih-en Ko</td>
</tr>
<tr>
<td>Dean of General Affairs</td>
<td>Shiaw-shyan Luo</td>
</tr>
<tr>
<td>Dean of Research and Development</td>
<td>Der-wen Chang</td>
</tr>
<tr>
<td>Dean of Human Resources</td>
<td>Shi-feng Chuang</td>
</tr>
<tr>
<td>Dean of Financial Affairs</td>
<td>Jui-chih Chen</td>
</tr>
<tr>
<td>Dean of Library</td>
<td>Sheue-fang Song</td>
</tr>
<tr>
<td>Chief Information Officer</td>
<td>Chin-hwa Kuo</td>
</tr>
<tr>
<td>Executive Director of the Center for Learning and Teaching</td>
<td>Chia-cheng Yu</td>
</tr>
<tr>
<td>Executive Director of Alumni Services and Resources</td>
<td>Chun-young Perng</td>
</tr>
<tr>
<td>Development</td>
<td></td>
</tr>
<tr>
<td>Dean of International Affairs</td>
<td>Pei-wha Chi Lee</td>
</tr>
<tr>
<td>Director of Tamkang Times</td>
<td>Yu-pei Ma</td>
</tr>
<tr>
<td>Director of the Center for Environmental Protection, Safety and Health</td>
<td>Shiaw-shyan Luo</td>
</tr>
<tr>
<td><strong>August, 2014</strong></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Aug 1</strong></td>
<td>First semester of 2014-15 academic year begins</td>
</tr>
<tr>
<td><strong>Aug 6</strong></td>
<td>On-campus registration for new evening degree students (entering through general admission) Registration</td>
</tr>
<tr>
<td><strong>Aug 11</strong></td>
<td>Deadline for direct entry into PhD programs Application</td>
</tr>
<tr>
<td><strong>Aug 13</strong></td>
<td>On-campus registration for new transfer students</td>
</tr>
<tr>
<td><strong>Aug 13-14</strong></td>
<td>2014-15 Orientation for new department chairs</td>
</tr>
<tr>
<td><strong>Aug 16-17</strong></td>
<td>Dormitory open house (Tamsui Campus)</td>
</tr>
<tr>
<td><strong>Aug 19-21</strong></td>
<td>University’s Day Division Department Freshmen course Registration</td>
</tr>
<tr>
<td><strong>Aug 21-25</strong></td>
<td>2014-15 TKU Seminar for Leaders of Student Clubs</td>
</tr>
<tr>
<td><strong>Aug 23</strong></td>
<td>Introductory seminar for freshmen and parents in Taipei</td>
</tr>
<tr>
<td><strong>Aug 27</strong></td>
<td>On-campus registration for new evening degree students (entering through admission application) Teaching workshops for new faculty members</td>
</tr>
<tr>
<td><strong>Aug 30</strong></td>
<td>Introductory seminar for freshmen and parents (Lanyang campus) Dormitory open house (Lanyang campus)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>September, 2014</strong></th>
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<tbody>
<tr>
<td><strong>Sep 3-5</strong></td>
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<tr>
<td><strong>Sep 5-7</strong></td>
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<td><strong>Sep 8</strong></td>
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<td><strong>Sep 9-10</strong></td>
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<td><strong>Sep 9-12</strong></td>
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<td>Date</td>
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<tr>
<td>Sep 9-28</td>
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<td>Sep 10</td>
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<td>Sep 11-12</td>
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<td>Sep 11</td>
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<td>Sep 12</td>
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<td>Sep 12</td>
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<td>Sep 15</td>
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<td>Sep 15-Oct 3</td>
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<td>Sep 15-27</td>
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<tr>
<td>Sep 17</td>
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<tr>
<td>Sep 22-28</td>
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<tr>
<td>Sep 25</td>
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<tr>
<td>Sep 26</td>
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</tbody>
</table>

**October, 2014**

<p>| Oct 1-31 | TKU Quality Award, Quality Management Competition Application |</p>
<table>
<thead>
<tr>
<th>Oct 3</th>
<th>138th TKU Administrative Conference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 10</td>
<td>National Day of the Republic of China (national holiday)</td>
</tr>
<tr>
<td>Oct 17</td>
<td>Student Affairs Meeting</td>
</tr>
<tr>
<td>Oct 18</td>
<td>Conference on Instructional and Administrative Reform</td>
</tr>
<tr>
<td>Oct 22</td>
<td>TKU Curriculum Committee Meeting</td>
</tr>
<tr>
<td>Oct 24</td>
<td>Student Admissions Committee Meeting</td>
</tr>
<tr>
<td>Oct 27</td>
<td>Completion of 1/3 of the first semester (deadline for deferring, discontinuing, or expelled students to receive a refund of 2/3 of the initial tuition fees)</td>
</tr>
<tr>
<td>Oct 27-Nov 9</td>
<td>Mid-term Teaching Evaluation Week</td>
</tr>
<tr>
<td>Oct 29</td>
<td>Academic Affairs Meeting</td>
</tr>
</tbody>
</table>

**November, 2014**

| Nov 3-30   | Period for graduate degree examination |
| Nov 7     | 72nd University Meeting (review of final proposal) |
| Nov 8     | TKU 64th Anniversary Celebration Alumni Homecoming |
| Nov 14    | 2014-15 TKU Faculty Review Committee Meeting |
| Nov 17-23 | Mid-term Examination Week |
| Nov 28    | 139th TKU Administrative Conference |

**December, 2014**

<p>| Dec 1-Jan 18 | Graduate degree examinations (oral defense) |
| Dec 8       | Completion of 2/3 of the first semester (deadline for deferring, discontinuing, or expelled students to receive a refund of 1/3 of the initial tuition fees) |
| Dec 8-14    | Period for mid-term dropping of classes |
| Dec 10      | Student Admissions Committee Meeting |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 22-Jan 4</td>
<td>Teaching Assessment Week</td>
</tr>
<tr>
<td>Dec 26</td>
<td>140th TKU Administrative Conference (featuring department chairs &amp; student representatives)</td>
</tr>
</tbody>
</table>

**January, 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Jan 1</td>
<td>New Year’s Day (national holiday)</td>
</tr>
<tr>
<td>Jan 5</td>
<td>Application deadline for deferral of study</td>
</tr>
<tr>
<td>Jan 12-24</td>
<td>Students may access academic grades online</td>
</tr>
<tr>
<td>Jan 12-18</td>
<td>Final Examination Week</td>
</tr>
<tr>
<td>Jan 19-27</td>
<td>Preliminary Second Semester Course Selection</td>
</tr>
<tr>
<td>Jan 20</td>
<td>Office of Military Education and Training End-of-Year Review Meeting</td>
</tr>
<tr>
<td>Jan 23</td>
<td>General Affairs Performance Evaluation Meeting</td>
</tr>
<tr>
<td>Jan 31</td>
<td>End of first semester</td>
</tr>
</tbody>
</table>

**ACADEMIC CALENDAR 2014-2015 (Second Semester)**

**February, 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>Feb 1</td>
<td>Second semester commences</td>
</tr>
<tr>
<td>Feb 7-23</td>
<td>Chinese New Year Holidays (New Year’s Eve: Feb 18)</td>
</tr>
<tr>
<td>Feb 23</td>
<td>Deadline for enrollment and tuition payment</td>
</tr>
<tr>
<td>Feb 24</td>
<td>Classes commence</td>
</tr>
<tr>
<td></td>
<td>Faculty and staff resume work</td>
</tr>
<tr>
<td>Feb 24-Mar 14</td>
<td>Application for exemption of national defense military training and nursing courses</td>
</tr>
<tr>
<td>Feb 25-Mar 9</td>
<td>Students may check enrollment status online</td>
</tr>
<tr>
<td>Feb 27-28</td>
<td>Make up examinations for final examinations in the previous semester</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>Feb 27</td>
<td>Extra day off for Peace Memorial Day</td>
</tr>
<tr>
<td>Feb 28</td>
<td>Peace Memorial Day (national holiday)</td>
</tr>
<tr>
<td>Mar 3-9</td>
<td>Period for adding or dropping courses</td>
</tr>
<tr>
<td>Mar 11-17</td>
<td>2015–2016 Application period for inter-departmental transfer</td>
</tr>
<tr>
<td>Mar 13</td>
<td>141st TKU Administrative Conference</td>
</tr>
<tr>
<td>Mar 14</td>
<td>Spring Banquet, Alumni from Every Department are Invited For Homecoming</td>
</tr>
<tr>
<td>Mar 19-25</td>
<td>Application for Education Program</td>
</tr>
<tr>
<td>Mar 20</td>
<td>Total Quality Management Workshop for administrative staff</td>
</tr>
<tr>
<td>Mar 23-Apr 12</td>
<td>Mid-term Teaching Evaluation Week</td>
</tr>
<tr>
<td>Mar 23-May 1</td>
<td>Application period for graduate degree examinations</td>
</tr>
<tr>
<td>Mar 30-Apr 2</td>
<td>Teaching Administration Observation Day</td>
</tr>
</tbody>
</table>

**April, 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>Apr 3</td>
<td>Extra Day off For Children’s Day</td>
</tr>
<tr>
<td>Apr 4</td>
<td>Children’s Day (national holiday)</td>
</tr>
<tr>
<td>Apr 5</td>
<td>Tomb Sweeping Day (national holiday)</td>
</tr>
<tr>
<td>Apr 6</td>
<td>Extra Day Off For Tomb Sweeping Day</td>
</tr>
<tr>
<td>Apr 7</td>
<td>Deadline for deferring, discontinuing or expelled students to receive a refund of 2/3 of the initial tuition fees</td>
</tr>
<tr>
<td>Apr 8</td>
<td>Student Admissions Committee Meeting</td>
</tr>
<tr>
<td>Apr 17</td>
<td>142nd TKU Administrative Conference (featuring department chairs &amp; student representatives)</td>
</tr>
<tr>
<td>Apr 22</td>
<td>Student Admissions Committee Meeting</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
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<tr>
<td>Apr 27-may 3</td>
<td>Mid-term Examination Week</td>
</tr>
<tr>
<td>Apr 29</td>
<td>Student Affairs Meeting</td>
</tr>
<tr>
<td><strong>May, 2015</strong></td>
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</tr>
<tr>
<td>May 1</td>
<td>Preparatory Meeting for the TKU Graduation Ceremony</td>
</tr>
<tr>
<td>May 1-Jun 28</td>
<td>Graduate degree examinations</td>
</tr>
<tr>
<td>May 7</td>
<td>Earthquake evacuation drills and disaster prevention activities for all buildings used for teaching at the Tamsui Campus</td>
</tr>
<tr>
<td>May 8</td>
<td>TKU Curriculum Committee Meeting</td>
</tr>
<tr>
<td>May 11-24</td>
<td>Teaching Assessment Week (for graduating students Theme)</td>
</tr>
<tr>
<td>May 13</td>
<td>2015-16 TKU Faculty Review Committee Meeting</td>
</tr>
<tr>
<td>May 15</td>
<td>2015-16 TKU Faculty Review Committee Meeting</td>
</tr>
<tr>
<td>May 18</td>
<td>Completion of 2/3 of the first semester (deadline for deferring, discontinuing, or expelled students to receive a refund of 1/3 of the initial tuition fees)</td>
</tr>
<tr>
<td>May 18-24</td>
<td>Period for mid-term dropping of classes</td>
</tr>
<tr>
<td>May 20</td>
<td>Academic Affairs Meeting</td>
</tr>
<tr>
<td>May 20- Jun 2</td>
<td>Candidate Selection and Review Meeting for TKU Education Programs</td>
</tr>
<tr>
<td>May 22</td>
<td>The 143rd TKU Administrative Conference (preliminary review of budget)</td>
</tr>
<tr>
<td>May 25</td>
<td>Application deadline for graduating students to defer study</td>
</tr>
<tr>
<td>May 27</td>
<td>2015-16 TKU Faculty Review Committee Meeting</td>
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<tr>
<td>May 29</td>
<td>General Affairs Meeting</td>
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<tr>
<td><strong>June, 2015</strong></td>
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<tr>
<td>Jun 1-7</td>
<td>Final examinations for graduating students</td>
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<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>Jun 1 - 14</td>
<td>Teaching Assessment Week (excluding graduating students)</td>
</tr>
<tr>
<td>Jun 1 - 19</td>
<td>Graduating students may access semester grades online</td>
</tr>
<tr>
<td>Jun 3</td>
<td>Student Admissions Committee Meeting</td>
</tr>
<tr>
<td>Jun 5</td>
<td>73rd University Meeting (review budget proposal)</td>
</tr>
<tr>
<td>Jun 6</td>
<td>Lanyang Campus Commencement</td>
</tr>
<tr>
<td>Jun 13</td>
<td>Tamsui Campus Commencement</td>
</tr>
<tr>
<td>Jun 15</td>
<td>Deadline for deferral of study (not including graduating students)</td>
</tr>
<tr>
<td>Jun 18</td>
<td>Make-up examinations for graduating students</td>
</tr>
<tr>
<td>Jun 19</td>
<td>Dragon Boat Festival (National holiday)</td>
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<tr>
<td>Jun 20</td>
<td>Extra day off for Dragon Boat Festival</td>
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<tr>
<td>Jun 22-28</td>
<td>Final Examination Week</td>
</tr>
<tr>
<td>Jun 22-July</td>
<td>Students may access semester grades online</td>
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**July, 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Jul 1-Aug 31</td>
<td>Summer holidays: university closed July 6-9 and every Friday</td>
</tr>
<tr>
<td>Jul 21</td>
<td>2015-16 TKU Faculty Review Committee Meeting</td>
</tr>
<tr>
<td>July 31</td>
<td>End of academic year</td>
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</table>
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, and the Shao-Mo Memorial Activity 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).


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 Studies,
Education and Global Development. Tamkang University’s 8 colleges are made up of 48 departments and divisions, 46 master’s programs, and 18 doctoral programs.

After more than 64 years of development, Tamkang now has a student enrollment of over 27,000, more than 2,100 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 170 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) and the current President, Flora Chia-I Chang, who assumed her presidency on August 1, 2004. 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, create the future and, to put it in Dr. Chang’s words, “achieve research excellence, instructional improvement, and enhancement of social welfare.”

Globalization

In the past decades, Tamkang University has actively pursued a policy of internationalization. Tamkang’s efforts in this area can be traced back to 1968, when it signed its very first academic agreement with Chuo Gakuin University in Japan. In 1978, Tamkang University (TKU) established an Academic Exchange Committee, which was chaired by the then President of TKU, Dr. Clement C.P. Chang. The Committee supported Tamkang’s push toward globalization by sponsoring international conferences, forming academic relationships with overseas universities, initiating faculty/student exchange programs, inviting eminent overseas scholars to deliver lectures, and subsidizing faculty members’ pursuit of overseas studies and training.

In 1995, the Academic Exchange Committee changed its name to the International Exchange Committee (IEC). Thus far, it has established academic partnerships with over 168 universities spanning five continents (see “Appendix A”). In 1993 the Committee initiated the Junior Year Abroad Program (JYAP), with the aim of training students to acquire a global outlook and to better understand and appreciate other cultures. Since then, the number of students sent abroad to Tamkang’s sister universities in Japan, Germany, France, Spain, Russia, Canada, and the United States has increased with each year. This year, a total of 506 students are studying abroad under the JYAP.

In the 2014-2015 academic year, about 1,400 foreign, Chinese Mainland and overseas Chinese students studied at Tamkang University, for degrees. About 544 foreign students are currently studying Mandarin at the TKU Chinese Language Program.

Tamkang University’s efforts in internationalization have not only helped to promote university-based academic and cultural exchange, but have also helped bring together people of varying cultural backgrounds from a vast range of countries worldwide.

Information-Oriented Education

Tamkang 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 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). Tamkang’s “e-Business Team”, comprised of faculty and students, has helped Tamkang become the first private university to qualify as an “e-Service Institution” according to the Industrial Development Bureau of the Ministry of Economic Affairs. In e-Business Weekly Magazine’s survey of the digital environment of colleges and universities in Taiwan, Tamkang ranked number one out of a total of 127 universities, and was described as a “digital paradise.”

According to figures released in 2011 by the Webometrics’ Ranking Web of World Universities, TKU is ranked 272nd among 20,000 universities, 33rd in Asia, 9th in Taiwan, and 1st among private Taiwan 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 has 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 has 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 addition to Tamkang University’s triple objectives of globalization, information-oriented education, and future-oriented education, TKU is currently re-engineering its “Fourth 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 TKU’s administrative functions, including academic affairs, student affairs, general affairs, human resources, financial affairs, 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 is in charge of all matters concerning international exchange and education, and is the chairperson for the Internationalization and International Exchange Committee and the Cross-Strait Task Group. The Vice President for International Affairs also supervises the Office of International and Cross-Strait Affairs, which works to form and maintain academic partnerships with overseas universities, and to offer advice and guidance to foreign and Chinese Mainland students. The Office of the Vice President for International Affairs is located in the Ching-sheng Memorial Building on the Tamsui Campus.

Office of 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 and information services. 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 carries out educational assessment and internal auditing. It conducts various academic evaluations, including the Student Evaluation of Teaching and the Departmental Evaluation, and holds various awards, seminars and conferences, such as the Tamkang Quality Award, the Total Quality Management Seminar, the Academic and Administrative Innovation Conferences, and more. Systems of internal control and internal audit activities are designed and implemented to ensure the effectiveness and continued improvement of university operations.

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 2014, the Office consists of 21 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. In August 2013 we merged English Language Center with Extension Education Center into Extension Education Center.

Office of Physical Education
The office consists of two sections, the Physical Education Instruction Section and the Physical Education Activities Section. The former is in charge of the design and instruction of physical education courses. All Tamkang University undergraduates (excluding seniors) take two hours of physical education courses per week. Although this course does not carry academic credits, it is required for graduation. The curriculum for physical education consists of theoretical classroom learning and basic exercise routines. The Physical Education Activities Section is responsible for all athletic activities at TKU. However, students are also encouraged to organize teams for intercollegiate competition or for intramural sports such as basketball, baseball, table tennis, tennis, badminton, softball, soccer, volleyball, golf, rugby, martial arts, taekwondo, fencing, bowling, billiard, 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 assistances to students in times of need and emergency. 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, admission, and printing sections.
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 2014-2015 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 resource 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 help all departments to utilize resources more efficiently and effectively, and therefore 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 1.3 million printed volumes; 2 million electronic books; 70,000 periodical titles (including electronic journals); 133,000 non-book items; and 585 electronic databases. All materials are managed by the Library Integrated System named Virtua.

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

Center for Learning and Teaching
The Center for Learning and Teaching (CLT) was established in August 2006 to improve the quality of instruction 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 emphasizing research planning, curriculum design, counseling, enhancement of digital teaching and learning, and distance education. These services are provided by each of the CLT’s three sections.
(1) Teacher Professional Development Section (TPD): The mission of the TDP section is to provide services and consultations to faculty members on incorporating appropriate pedagogies in their courses to enhance teaching and learning.

(2) Student Learning Support Section (SLS): The SLS Section provides help and support to equip students with the academic tools necessary for success. Tertiary education is a period when students develop their abilities of independent thinking and learning. Moving from a high school system with rigid methods of teaching and learning to a relatively moderate university environment can be a real challenge for students. In order to achieve true excellence, the SLS Section helps students develop their own unique learning styles, overcome all learning-based obstacles, and identify learning methods and strategies that suit each individual learner. Students will be able to use the formula for success to achieve their own goals.

(3) Distance Education Development Section (DED): The DED Section integrates course domain knowledge, computers, network pedagogy, and learning technologies to develop e-learning courseware and create innovative learning environments. The DED section is also responsible for all teaching and learning activities in the TKU Cyber Campus, which erases spatial-temporal constraints and enhances learning.

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, comprises the Alumni Liaison Section and the Fund Raising Section.

As of July 2014, the total number of Tamkang alumni has reached 240,000. Tamkang graduates have successfully organized up to 141 alumni associations based on departments and graduate institutes, regions, businesses, and others.

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 sister 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 lifestyle 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 university has two medical clinics: one is located on the Tamsui Campus and is staffed by professional physicians and nurses. It is open from Monday to Friday, 8:00-17:00 and 18:00-21:00. The other one is located on the Taipei Campus and is open from Monday to Friday, 14:00-21:00. Medical care is provided free of charge for TKU students, staff and faculty members. A permanent physician is available on the Tamsui Campus, and both campuses are less than a fifteen-minute drive to well-equipped hospitals.

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 new 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 2,287 female students and 660 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 you wish 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 at the Taiwan Representative Office in their country of residence or consult their schools for other possible ways of applying.

International and Mainland Chinese Students

International students may apply for direct admission to TKU with 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 eighteen Ph.D. degrees in Chinese, English, Chemistry, Physics, American Studies, Management Sciences, International Affairs and Strategic Studies, Computer Science and Information Engineering, Water Resources and Environmental Engineering, Mathematics, Civil Engineering, Electrical Engineering, Banking and Finance, Industrial Economics, Mechanical and Electro-Mechanical Engineering, Chemical and Materials Engineering, and European Studies. Master’s programs are available in forty-six 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 with 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 2014-2015 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 are subject to change accordingly.

Undergraduate and 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>39,000</td>
<td>7,880</td>
</tr>
<tr>
<td>Science</td>
<td>40,800</td>
<td>13,460</td>
</tr>
<tr>
<td>Engineering</td>
<td>40,800</td>
<td>13,920</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>39,000</td>
<td>8,590</td>
</tr>
<tr>
<td>Foreign Languages and Literatures</td>
<td>39,000</td>
<td>7,880</td>
</tr>
<tr>
<td>International Studies</td>
<td>39,000</td>
<td>7,880</td>
</tr>
<tr>
<td>Education</td>
<td>39,000</td>
<td>7,880</td>
</tr>
<tr>
<td>Global Development</td>
<td>40,800</td>
<td>13,920</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>13,920</td>
</tr>
<tr>
<td>Information and Communication</td>
<td>40,800</td>
<td>13,920</td>
</tr>
<tr>
<td>Information Management</td>
<td>40,800</td>
<td>13,920</td>
</tr>
<tr>
<td>International Tourism Management</td>
<td>39,000</td>
<td>8,590</td>
</tr>
<tr>
<td>Global Politics and Economics</td>
<td>39,000</td>
<td>7,880</td>
</tr>
<tr>
<td>English Language and Culture</td>
<td>39,000</td>
<td>7,880</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>Other Fees (NT$ per semester) (Uninformed rate throughout the University)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education</td>
<td>2,700</td>
</tr>
<tr>
<td>Military Training</td>
<td>2,700</td>
</tr>
<tr>
<td>Computer Laboratory</td>
<td>1,030</td>
</tr>
<tr>
<td>Language Laboratory</td>
<td></td>
</tr>
<tr>
<td>- language majors</td>
<td>850</td>
</tr>
<tr>
<td>- non-language majors</td>
<td>640</td>
</tr>
<tr>
<td>Student Life Insurance (per semester)</td>
<td>188/188</td>
</tr>
<tr>
<td>E-Learning Computer Laboratory fee (per semester)</td>
<td>1,540</td>
</tr>
</tbody>
</table>

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</td>
<td>5,755</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>Science</td>
<td>6,364</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>Engineering</td>
<td>6,364</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>8,060</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>Foreign Languages and Literatures</td>
<td>5,755</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>International Studies</td>
<td>5,755</td>
<td>10,810</td>
<td>6,000</td>
</tr>
<tr>
<td>Education</td>
<td>5,755</td>
<td>10,810</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>1,725</td>
<td>4,950</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:**

   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).
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. Once grades have been submitted to the Office of Academic Affairs, they cannot be altered.
2. Students should file a petition to the Office within three weeks of receiving their academic transcripts if any dispute over grades occurs. If changes are required due to a teacher’s mistake or negligence, the teacher concerned should report such changes and submit the original transcript together with related information to the Registration Section of the Office of Academic Affairs.

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 the following courses: Physical Education, Military Training, Nursing, Extramural Workshop Practice, and other experimental courses.
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 15 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. 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:

a) Completion of all required credits;
b) Grades average above 80 each semester;
c) Grade average for behavior/conduct exceeds 80;
d) Grade average for Physical Education and Military/ Nursing Training exceeds 70;
e) Overall performance ranks within Top 5% of academic department; school transfer student are based on their transferring years.
f) Meets all university, college and department requirements

Graduate Programs

1. Master’s candidates must complete at least 24 credits, not including the Master’s thesis, to graduate.
2. Ph.D. candidates must complete at least 18 credits, not including a doctoral dissertation.
Dismissal

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

Undergraduates
1. Undergraduate students of every department who fail in one-half of their semester credits in a semester for the second time will be expelled from school.
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) Those people who are blind, deaf, handicapped by language barriers, and those people with various forms of physical handicap and hold a certificate of handicap.
   (7) Children of diplomats stationed abroad.
   (8) Those students who meet the criteria established by the Ministry of Education and make a good grade in sports.

The aforementioned two sections do not apply to those students who take less than (not including) 10 credits.

Credits for Military Training (or Nursing) and Physical Education should be counted in the number of credits awarded for the courses “Military Training (or Nursing)” and “Physical Education.”

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, 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 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. MA program students who fail in all the courses they take for either the first or the second semester of their first academic year. This regulation does not apply to students who only take one course either of the two semesters.
6. Graduate students found to be plagiarizing or cheating in their relative thesis papers, creations, performances, letter reports or technologic reports.
JUNIOR 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 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 5400 students from Tamkang University have studied at Tamkang’s overseas sister universities under the Junior Abroad Program. In the 2014-2015 academic year, 504 students spent their junior year studying overseas, at 69 universities in 15 countries.

A Brief History of Tamkang’s International Exchange Student Programs
Tamkang University’s International Exchange Program enjoys formal academic ties with over 170 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 1500 international, overseas Chinese and Mainland Chinese 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 673 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.”
INFORMATION FOR INTERNATIONAL FACULTY AND STUDENTS

Tamkang University (TKU) has a long history of international exchange and cooperation. Apart from maintaining close relations with its over 170 sister universities, in the 2014-2015 academic year TKU welcomed numerous visiting and permanent faculty members from all over the world. This section provides some useful information for new international faculty and students at TKU.

Children and Dependents

International faculty and students with school-aged children should pay careful attention to this section. Education in the Republic of China (ROC) is compulsory for all children who have not completed nine years of formal schooling. This law applies to all foreign and native residents of the ROC. Children may attend either public or private schools accredited by the Ministry of Education. The language of instruction in the public schools is Mandarin Chinese. In some private schools, however, classroom instruction is conducted in English.

Your choice of a school for your children may be based on your children’s linguistic skills and other related factors. Children in the early primary years (equivalent to US grades K-3) may adjust easily to public school instruction in Chinese. Indeed, children of that age may greatly benefit from immersion in another culture. However, older children who are not fluent in Mandarin may not acclimatize quite as smoothly in the public school system. New international faculty or students who have older children (US grades 4-12) should contact the Office of International and Cross-Strait Affairs for a list of private schools that provide instruction in English. Some of these schools are described below.

The Grace Christian Academy at 67 Dong Sing St., Nankang, Taipei, offers an entirely English curriculum and faculty exclusively from the US. It consists of a kindergarten, elementary school and junior high school. Alternatively, there is the Taipei European School (TES), which has two campuses: one at 727 Wen Lin Rd Shihlin, and the other at 31 Chien-yeh Rd. Shihlin, Taipei. It provides British, French and German style education for international students aged 3-18. There is also the Dominican International School at 76 Tachih St., Taipei; the Taipei American School (TAS) at 800, Chungshan N. Rd., Sec. 6., Taipei; and the Taipei Japanese School, located opposite TAS, at 785 Chungshan N. Rd., Sec. 6., Taipei.

TES and TAS offer European/English-language instruction for students at an age equivalent to that of US grades 9-12. The tuition rate at TAS is high (currently in excess of US $14,000 per year) and scholarships are rarely offered; whereas tuition at TES costs around € 10,000 per year. Unless you have more extensive financial resources than the average TKU faculty member, you may consider sending your child / children (of senior high school age) to a school in your home country.

College-aged students accompanying you have several options. Many universities in Taiwan have exchange student programs. These one-year exchange programs are organized for students who are already matriculated in a foreign university. Courses offered relate to Chinese language, customs, and culture; some coursework may be offered in English.

Other students might wish to work on a degree in a local university. All degree programs require fluency in Mandarin Chinese. If a student wishes to study at a Taiwanese university, he/she should contact the ROC embassy, consulate, or representative in his/her home country, as well as contacting the schools that interest him/her. Children of TKU faculty who attend TKU may be eligible to receive one of various scholarships.

Taxes

Foreign nationals residing and working in the Republic of China are obligated to pay income tax to the ROC government. This rule applies to almost all international faculty at Tamkang University. Among the very few exceptions are guest/exchange/Fulbright professors whose sole source of income is their salary from their home institutions or government, and other faculty who hold passports from governments that have diplomatic relations with the ROC.

More detailed information about the income tax law of the ROC is provided in the brochure ‘Aliens and Individual Income Tax’, published by the National Tax Administration in Taipei. The brochure is available upon request at the following address:

Foreign Affairs Office
National Tax Administration
Ministry of Finance
2, Sec. 1, Chung-Hwa Road, Taipei, Taiwan, R.O.C.
For taxation purposes, foreign nationals are categorized as either residents or non-residents based on their length of stay in Taiwan. You are considered a non-resident for your first 183 (consecutive) days in Taiwan. Thereafter, you are considered a resident unless you leave the country for more than one year. Non-residents are obliged by law to pay tax at a rate of 20 percent.

Residents pay taxes based on a progressive tax scale ranging from 6 to 40 percent. Most TKU faculty members pay tax at a rate of 13 or 21 percent of their total income. Please note that taxable income includes all remuneration for services performed within the ROC, as well as income from sources outside the ROC (such as royalties, commissions, and wage supplements) unless explicitly exempted by the ROC tax code. However, residents are entitled to numerous exemptions and deductions that may reduce their tax liability. There is no sales tax in the Republic of China and very few luxury tax regulations.

The university will withhold a portion of your compensation each month for tax purposes (20 percent for non-residents; progressive scale for residents). We suggest that you keep each monthly statement as well as all financial records of taxable items. According to law, you will not be permitted to leave the ROC unless your tax obligations are fulfilled.

Unless you are a citizen of the ROC, you are required to assign a “guarantor” while you are working here. Usually a staff member of the department at which you are assigned will serve as your guarantor. Please remember that this individual is responsible for supervising your tax or financial obligations and that your guarantor is doing this as a personal service to you. If you do not fulfill a financial obligation, your guarantor—not the university—will have to bear the responsibility.

Taxes are collected between May 1 and May 31 each year for taxes incurred in the previous year. Also, you can pay taxes any time if you plan to leave the ROC either temporarily or permanently. The university will provide you with a cumulative withholding statement in early January, or at any time before you leave Taiwan. A department assistant will be available to assist you in finding the appropriate office to pay your taxes.

When you visit the tax office to pay your taxes, be sure to request an official tax statement in English. Many countries have tax and trade agreements with the ROC and taxes paid to the ROC government may affect your tax liabilities in your home country.

**Transportation**

Northern Taiwan has a comprehensive public transportation system, and new international faculty are encouraged to make full use of this system instead of driving a car or riding a scooter. Numerous bus services operate between Taipei and Tamsui, while TKU itself has an employee shuttle bus that stops at various locations between the Tamsui and Taipei campuses. There are also shuttle buses that run between the Tamsui Campus and the Tamsui MRT Station from 8:15 to 22:10 on workdays, with two trips per hour (The bus schedule changes during the summer and winter holidays and TKU exam weeks). The Taipei MRT allows easy access to all of the major sights and main business and residential areas around Taipei, including the Chiang Kai Shek Memorial Hall and the Sun Yat Sen Memorial Hall. It takes about 35-40 minutes to get from the Tamsui MRT Station to Taipei Main Station in Taipei. For the most up-to-date version of the MRT Route Map, refer to the following website:


Faculty members who wish to drive their own cars or motorcycles to work can park on the Tamsui Campus. There are no parking spaces, however, on the Taipei Campus. Parking in general is a major problem in Taipei City, where there is an average of five cars for every one parking space. The university therefore advises newly arrived international faculty to use public transport instead.

Driving conditions in Taiwan are unique. The highway system does not meet the needs of a fastly-growing population and an expanding economy. Furthermore, there is a shortage of public parking spaces, as mentioned above, especially in Taipei. It takes a lot of practice to drive during peak hour in Taipei. We therefore suggest that you wait a while before driving in Taiwan.

Some foreign driving licenses are accepted in Taiwan. However, depending on which country you come from, you may need to obtain an ROC driver’s license. For this, you will need to take a written examination (in Chinese) and a driving test. In the case of an accident, insurance coverage may not be sufficient. You might be required to compensate for the injury or loss of the other party, even if you were not responsible for the accident. We regret that the university cannot provide legal assistance to faculty members for activities not directly related to instruction.

For years, increasing demands for intercity transportation attracted much attention from the government, which sought to find an optimal solution. This solution came in the form of the High
Speed Rail Service (HSR), which was completed in 2007. The HSR links Taipei to Kaohsiung, with a total length of 345km and 90 minutes of travel time. During the first stage of the operation, eight stations have been built, namely, Taipei, Banciao, Taoyuan, Hsinchu, Taichung, Chiayi, Tainan, and Kaohsiung (Zuoying). In the future, even more stations will be developed. The HSR is a fast and convenient way of traveling from the north to the south of Taiwan.

We therefore suggest that international faculty members use public transportation, including the university bus service, taxi, the MRT (best choice) and the HSR (for trans-island travel).

Accommodation

Accommodation for faculty members on the Tamsui Campus is limited and available only for faculty members with family, and for single female faculty members. Faculty members with dependents may be housed in one of the scholar residence apartment buildings or townhouses. These units vary in size from one to five bedrooms and may be either furnished or unfurnished. Please note that these units are in great demand, and an early request will improve your chances of obtaining one. Furnished single rooms at the Sungtao Dorm are offered for single female faculty only. As for single male faculty members, we apologize that you will have to rent apartments or single rooms near the campus.

The single rooms in the Hwei-wen Hall are reserved exclusively for exchange professors and visiting professors with no dependents. These units provide private rooms with private baths, but no cooking facilities. There are a number of restaurants on or near the campus.

Please advise the appropriate administrative office of your housing needs as soon as possible after receiving your teaching or research appointment. The Office of General Affairs makes housing arrangements based on a first-come-first-served basis, and an early request is therefore essential. Guest/exchange professors receive highest priority and suitable accommodation can usually be provided for such guests on short notice.

If we are not able to provide you with on-campus accommodation, you may request to be put on a waiting list for the first suitable vacancy. In the meantime, the department assistant will help you locate alternative accommodation. Monthly rent for private housing in the Tamsui area ranges from around US $300 / month for an apartment near the campus with 2 bedrooms, one living room, one bathroom, and one kitchen, to a very expensive US $5,000 for a 5-bedroom luxury house complete with modern facilities, a double garage, front and back yards with a swimming pool, situated in the scenic Yang Ming Shan area.

The university does not allow animals, pets, or dangerous, combustible items in the university dorms, so as to maintain the safety and serenity of the campus environment. Cooking is not allowed in the single dormitory or in Hwei-wen Hall.

Parking is available on the Tamsui Campus. Please refer to the section on “Transportation” for additional information.

Arrival Information

TKU employee contracts generally extend from August 1 to July 31 of the following year. If you wish to be paid for the month of August, you must report in person to the relevant administrative office prior to August 15. Otherwise, you will start receiving your pay in September.

Please notify the administrative office of the date, time, and flight number of your arrival at Taoyuan International Airport. If possible, a department assistant will go to the airport to meet you and accompany you to the Tamsui Campus. However, if you arrive at another city or airport in Taiwan, you will need to make your own arrangement for transportation to the university.

After getting off the plane, you will have to go through customs. We assume that you have obtained a copy of customs regulations from an ROC Representative Office abroad. When you pass through customs, you will also be asked to complete a currency declaration. You should declare the exact amount of foreign cash currency, gold, and silver in your possession. Also, remember to keep receipts of any transactions involving traveler’s checks.

After you finish all the procedures in the customs area, you will see a department assistant from Tamkang waiting for you in the waiting lounge. The assistant will help you with any additional entry formalities (such as currency exchange, etc.) and will take you to your residence. If for some reason the assistant is not there, ask an airline service assistant to write your address in Chinese characters and take a taxi. A typical taxi fare from the Taoyuan Airport to Taipei or Tamsui is approximately NT$ 1,000-1,500 (US$ 30-45).
Visas

All foreign nationals entering the Republic of China must have an appropriate visa. Complete regulations on visas may be obtained from any ROC embassy, consulate, or official representative office.

When you apply for a visa at the ROC representative office, be sure to take all the documents concerning your employment at Tamkang. This should include an official university employment contract (or letter of intent), your passport, and passports of accompanying family members.

Full-time regular faculty and guest/exchange professors who will be at Tamkang for longer than two months should apply for an Entry Visa. This entitles the holder to temporary resident status and the right to full-time employment with a local university. To obtain an Entry Visa from an ROC representative office abroad, you must present them with an official employment contract; a letter of intent or telegram is not sufficient. If you only have a letter of intent or telegram, you should request a “Tourist B” visa and we will help you apply for Entry Visa status upon arrival in the ROC.

Guest/exchange professors who will be visiting for less than two months should ask for “Tourist B” visas. These visas are valid for two months after the date of arrival in the ROC, and may be renewed twice for a maximum stay of six months. The “Tourist B” Visa has some advantages for short-term faculty members, as it reduces the amount of paperwork required when you leave Taiwan.

The university does not offer part-time employment to foreign nationals unless such applicants are already living in Taiwan. We assume that part-time faculty members will have organized the necessary visas and papers before their appointment.

Immediately upon your arrival in Taiwan, you should contact the administrative office in charge of your employment. For regular faculty, this office would be the undergraduate department or graduate institute with which you will be working. Guest/exchange professors should report to the Office of International and Cross-Strait Affairs. A department assistant will help you complete all the necessary registration procedures. For additional information about arrival procedures, please refer to the section “Arrival Information.”

Conditions of Appointment

New faculty members must submit their official credentials to the department chairperson or institute director within fourteen days after acceptance of their teaching position. All full-time and part-time faculty of the university are assigned to one of the undergraduate departments or the graduate institutes. However, a member of one department may teach in any other department with the approval of the department heads and the deans of the colleges concerned.

Faculty members are assigned to an academic rank according to their educational background and work experience. There are four formal faculty ranks and two special ranks.

The four formal ranks assigned to Tamkang University faculty are Lecturer, Assistant Professor, Associate Professor, and Professor. Lecturer is the beginning rank for new faculty members with at least an M.A. degree. New faculty members who hold a Ph.D. degree from an accredited university may be assigned to the initial rank of Assistant Professor. The rank of Professor is granted to new faculty members who already hold that rank in an accredited university. These formal ranks are not assigned by Tamkang University, but by the ROC Ministry of Education. Once a faculty member is awarded certification as a lecturer, assistant professor, associate professor, or full professor by the Ministry of Education, he/she may teach at that rank in any ROC university.

There are, however, two special ranks awarded by Tamkang University and not by the Ministry of Education. A beginning faculty member with only a BA degree but with specialties in a particular field may be appointed Technical Instructor; this rank is occasionally used for language instructors or engineering personnel. The highest academic rank of the university is Chair Professor. The title of Chair Professor is awarded to a faculty member who is already qualified for the rank of full professor, and is considered a world-class scholar of high achievement. The rank of Chair Professor is currently held by only three members of the university faculty.

Faculty may only be promoted within the official ranks. Technical Instructors are not eligible for promotion, and there is no rank higher than Chair Professor. Lecturers are eligible for promotion to Assistant Professor after three-to-six years of full-time teaching service, submission of a research paper equal in quality to a Ph.D. dissertation and a sufficient amount of articles published in professional journals. An Associate Professor is eligible for promotion to Professor after three years of service as an Associate Professor, submission of a renowned scholarly research paper and a sufficient amount of scholarly papers published in well-recognized academic journals. Tamkang University is one of the few
universities in Taiwan authorized by the ROC Ministry of Education to review its own faculty members’ requests for promotion.

New faculty members are subject to a one-year probationary period. After passing the evaluation by the department committee, they may be awarded another year-long contract; thereafter, faculty members are awarded contracts on a two-year basis. There is no “tenure” or permanent contractual teaching in Taiwanese universities. Full-time faculty members are not allowed to hold full-time positions outside Tamkang University, and may not teach more than four hours per week at another university or college; any part-time off-campus employment must be approved by the department chairperson or institute director as well as the dean of the college in which the faculty member is employed. In addition to their classroom instruction, full-time faculty must offer four-day office hours per week to fulfill their administrative, counseling, and coaching duties as assigned by their academic supervisors.

Lecturers are required to teach a minimum of ten hours per week. Associate Professors are required to teach a minimum of nine hours per week. Professors are required to teach a minimum of eight hours per week. In addition to the minimum teaching hours, full-time faculty may be allowed to teach up to six extra hours per week; the extra hours taught will be remunerated based on the hourly pay of the teacher’s academic rank. Faculty members conducting research under a research grant will be paid for no more than four extra hours of research.

Chair Professors are required to teach six hours per week and may not teach extra hours or hold any full time or part time off-campus position.

Part-time faculty members are paid according to the total class hours they teach per week. Part-time faculty may teach up to six hours per week at Tamkang University.

Full-time faculty members may request unpaid leave, for which they will need the approval of the department chairperson or institute director, the dean of the employing college and the president of the university. Requests for a one-week leave or leave of less than one week should be approved by the department chairperson or institute director. Requests for leave for more than one week require approval from an immediate supervisor as well as the college dean and the university president.

For leave of less than two weeks, the faculty member should make arrangements with students for make-up classes, and should inform the department or institute office and the Office of the Dean of Academic Affairs of these arrangements.

For leave of more than two weeks and less than one month, the faculty member must find a substitute teacher, who must be approved by the department chairperson or institute director, the dean of the college, and the Office of the Dean of Academic Affairs. The faculty member on leave will have to personally pay the substitute teacher for his/her services.

For leave of more than one month, the department chairperson will have to recruit a substitute teacher. The substitute teacher will be paid directly by the university, and his/her remuneration will be deducted from the salary of the faculty member on leave.

Extended leave (for one semester or one academic year) for academic or health reasons requires approval from the university president. Except for serious health emergencies, faculty members who wish to be considered for extended leave must submit their requests in writing to the university president no less than one month before the beginning of the semester of the proposed leave. Extended leave shall not begin in the middle of a semester. Please note that the university president will not always approve requests for extended leave.

Senior faculty members may be eligible for sabbatical leave. See the section on “Sabbaticals.”

An unofficial English translation of the employment contract is available upon request. However, any discrepancy between the English and Chinese versions will be resolved in favor of the Chinese version.

**Research Grants and Subsidies**

In the case that the publication of research papers involves a compulsory publication fee, the university will pay 80% of the fee, up to the amount of NT $10,000, excluding all other funding from other institutions. Moreover, the university will pay 50% of the fee, up to the amount of NT $10,000, excluding other funding by the author, if the publication fee for research papers is voluntary.

Full-time faculty members are eligible for a generous reduction in the costs of programming and timesharing on the university computer facilities. Please contact the TKU Office of Information Services for further information.
The university strongly encourages eligible faculty members to develop computer-assisted instruction (CAI) materials. Significant cash grants are available to faculty members for developing these materials. Further information may be obtained from the Computer Education Center.

The UDAS information services offered by the university library are available for research. The library will assume some of the financial burden for qualified research.

Tamkang University is fully supportive of faculty research. Reasonable requests for assistance that are consistent with the university’s aims and resources will be given careful consideration.

Sabbaticals

Sabbatical leave with full pay may be granted to senior faculty members who fulfill the following requirements:

1. Full-time faculty members who, after completing sabbatical leave, have at least two years of service remaining before retirement; have served as full professors for seven years and have received at least five research grants may be eligible for one-year sabbatical leave.

2. Those hired before July 31, 1998 who, after completing sabbatical leave, have at least two years of service remaining before retirement and have previously received TKU or NSC research grants or served as chair professors for a total period of seven years are eligible to apply for sabbatical leave.

Under the plan, duration of tenure is calculated as follows:

a) For professors who have never received the above-mentioned research grants, every two years of service shall be counted as one year of service.

b) For associate professors who have previously received the above-mentioned research grants, every two years of service shall be counted as one year of service.

c) For associate professors who have never received the above-mentioned research grants, every three years of service shall be counted as one year of service.

Sabbaticals are granted by the university president, and faculty members may either accept or decline the offer. However, faculty members shall not retire or resign within two years of completing sabbatical leave.

Preparation

This section ("Preparation") deals with matters related to international faculty at Tamkang University. Although some of the following information might not apply to international students attending Tamkang, such students should also read through this chapter carefully. This section provides information that all international members of the university should be aware of before leaving their home countries.

New international faculty members should return their signed contracts to the university within two weeks of receiving the contract. Failure to do so may result in cancellation of the offer. After new faculty have returned their contracts and completed the appropriate visa procedures, they should begin to prepare themselves for living in a new environment. This may simply mean gathering information about Taiwan so as to gain a clearer picture of the environment they will soon be living in. To follow, we have provided some general information that we hope will help.

Taiwan does not have four clearly defined seasons, but instead has two very long seasons: summer, which extends from June to September; and winter, which lasts from November until March. The other three months form two separate transitional periods when the weather shifts abruptly between the two seasonal patterns. Winter in Taiwan is cold, with average temperatures ranging from around 4°C to 15°C (approx. 40°F-60°F). It does not snow in Northern Taiwan, except in certain high mountain areas. However, it is humid, and so the weather often feels much colder than the temperature indicates.

Summer in Taiwan is hot and humid. The average temperature ranges from around 25°C to 35°C (approx. 77°F to 95° F), and humidity is consistently high, ranging from 60 to 90 percent at any given time throughout the year.

In general, the climate in Taiwan is good for one’s health, and faculty members will have sufficient opportunities to participate in outdoor activities throughout the year. The humidity may affect you in the first few days after arriving, but most people get used to it soon. Nevertheless, if you are suffering from arthritic or breathing problems, you should consult a physician before coming to Taiwan.

Taiwan’s subtropical climate simplifies your choices of clothing. Heavy winter jackets and boots are unnecessary unless you are interested in mountaineering. There is no strict university dress code for
faculty. In winter, male faculty members usually wear suits and ties; summer attire is more casual, with leisure suits, open-collar sport-shirts, and dress slacks commonly seen on the campus.

Taiwan is a major manufacturer of clothes, so while in Taiwan international faculty will find very good bargains on tailored and made-to-measure clothing.

Faculty members with school-aged children attending public schools will be required to purchase school uniforms. Other social and informal clothing for adults and children are similar to the usual attire in Western countries. However, very formal clothing (such as tuxedos and evening gowns) is rarely worn in Taiwan.

Although Taiwan does not have a Monsoon season like some other Southeast Asian nations, there are periods of heavy rain in the mid-winter and mid-summer seasons. In July and August, Taiwan experiences numerous typhoons (Pacific hurricanes). Generally speaking, these typhoons are more inconvenient than dangerous. Pacific storms are usually less severe than Atlantic hurricanes, and the university campus is situated several hundred feet above sea level. There is only cause for concern if you live in a low-lying area of Taiwan. The government warns and evacuates citizens when necessary.

Taiwan has an excellent health care system and faculty members will be covered by this insurance system (known as ‘National Health Insurance’) during their stay in Taiwan. There is a resident physician on the Tamsui Campus and modern hospital facilities within fifteen minutes from both the Taipei and Tamsui campuses. International faculty with special health concerns should communicate such concerns to the department chairperson or institute director at Tamkang before leaving their home country so that TKU can suggest required medications or treatments available in Taiwan.

You are required to submit health certificates (including HIV, lung X-ray and other physical examinations) before being admitted to the ROC. School-aged children attending public institutions in Taiwan must have a checkup and lung X-ray administered by an authorized health agency in Taiwan.

Aside from the health-related issues mentioned above, new international faculty should prepare themselves for working in an Asian cultural setting. This preparation should involve familiarizing oneself with the linguistic, social, economic, and political environment in Taiwan.

The official language of the Republic of China, and by extension Tamkang University, is Mandarin Chinese. Many native residents of Taiwan speak a dialect of Chinese called Taiwanese, which differs significantly from Mandarin. Older residents on the island may speak some Japanese, and the younger generation can communicate in basic English. This means that an international faculty member who cannot communicate in Chinese is somewhat limited in his/her class offerings and an international faculty member who cannot speak Chinese, Japanese, or English might find it difficult to adjust. The common language of instruction at Tamkang is Mandarin Chinese, and most university documents are written in Chinese. The Foreign Language departments are exceptions, where the common language of instruction for those departments is the subject-matter language. Other departments may allow for instruction in a foreign language with the permission of the department chairperson or institute director. For practical purposes, however, Chinese and English may be the only two feasible languages for instruction. The Chinese Language Center on the TKU Taipei Campus is one of the leading Chinese language schools in Taipei.

For most adult Westerners, the Chinese language is a formidable challenge and it is unlikely that a non-Chinese speaking faculty member can master the language before coming to Taiwan. However, the university encourages international faculty to study Chinese in their spare time after their arrival. There are many schools and tutors here which specialize in teaching Mandarin to speakers of other languages.

From a social and cultural aspect, there are a number of subtle differences between Chinese and Western cultures. You might want to prepare yourself for your future stay in Taiwan by reading the various travel guides and essays published by the ROC embassy, consulate, or representatives in your home country. We strongly recommend the current issue of the China Yearbook published by the China Publishing Company of Taiwan, ROC. We believe it will give you a more in-depth understanding of Taiwan.

Economically speaking, the story of Taiwan’s modernization is considered a miracle by many leading economists. Almost every conceivable Western commodity or service is available here. However, in the forty-year modernization process, there are a few areas (such as public utilities, etc.) where further development is needed. Foreigners are expected to be tolerant of the rare inconvenience.

Finally, there are some political considerations. International faculty members should be aware of and considerate toward the unique situation in the Republic of China. Although the Chinese Constitution and the regulations of Tamkang University uphold academic freedom and the right to free speech, political propaganda and political activities are strictly prohibited on campus.
Grading Practices

To international students and faculty, the grading practices used in Taiwan may seem a little confusing. Tamkang uses a numerical percentage system based on 100 points, where 80+ equals an “A” grade, 70+ equals a “B” grade, 60+ a “C” grade, 50+ a “D”, conditional failure-and under 50, a failure. Grading practices here tend to be more conservative than those in Western countries. Please discuss the grading system with a senior member in your department before you submit your final grades.

Programs of Study

Tamkang is a comprehensive research and teaching university. Currently, there are eight colleges at Tamkang University offering graduate and undergraduate programs. They are the College of Liberal Arts, the College of Science, the College of Engineering, the College of Business and Management, the College of Foreign Languages and Literatures, the College of International Studies, the College of Education, and the College of Global Entrepreneurial Development. The courses offered by each college and department are listed in the section “Programs of Study” to follow.
TAMKANG RESEARCH CENTERS

NANOTECHNOLOGY RESEARCH CENTER

Director: Kang, Shung-wen (康尚文)

The Nanotechnology Research Center is a research-oriented organization for conducting nano research in various areas of science, including physics, chemistry, life science, materials, electronics, and mechanics. The center serves a number of functions: it integrates resources and coordinates research projects both within and outside Tamkang University; it hosts regular seminars and forums, to promote multidisciplinary, collaborative research projects; and trains scientists and engineers in a range of scientific fields. The Center’s long term objective is to develop nano science and technology research and make new discoveries and advancements in the area of nanotechnology.

CHAMPION INCUBATION CENTER

Director: Shaw, Reuy-shiang (蕭瑞祥)

The Champion Incubation 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. Chinese E-commerce and internet information services
3. Cultural and creative industries
4. Biotechnology and environmental technology
5. Marketing strategy analysis and management consultation

RESOURCE CENTER FOR THE VISUALLY IMPAIRED

Director: Cheng, Tung-wen (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.

CENTER FOR TIBETAN STUDIES

Director: Wu, Kuan (吳寬)

Internationalization, humanitarianism and politics constitute the three main focuses of the Center for Tibetan Studies. In accordance with Tamkang's objectives of promoting globalization and future-oriented education, and as a response to the Dalai Lama’s request to promote Tibetan studies in
academic institutions throughout Taiwan, in August 2005 Tamkang set up the Center for Tibetan Studies. It is the first academic center in Taiwan to focus solely on Tibetan issues. The Center primarily explores topics on religion, history, and linguistic studies, and conducts both theoretical and applied research.

Theoretical research conducted by the Center investigates aspects of Tibetan history, religion, and language; while its applied research unit examines the application of the Tibetan language worldwide. The Center organizes biannual symposiums; while scholars and experts are regularly invited to Tamkang to give lectures on religion, art, and folklore. The Center sporadically holds Tibetan art exhibitions, prayer, blessing sessions, and book clubs to ensure it remains up-to-date in the unique field of Tibetan studies.

LIFE SCIENCE DEVELOPMENT CENTER

Director: Wang, San-lang

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 covers a number of professional domains, including biotechnology, applied microbiology, molecular biology, and neuroscience. Its functions are similar to that of the 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 scientists and engineers in order to meet current and future industry demands.

WIND ENGINEERING RESEARCH CENTER

Director: Cheng, Chii-ming

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: Yu, Gwo-hsing

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 public affairs 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.

ENERGY AND OPTOELECTRONIC MATERIALS RESEARCH CENTER

Director: Chang, Cheng-liang (張正良)

The Energy and Opto-Electronic Materials Research Center, established in 2007, is staffed by specialists in chemical engineering and materials engineering. The scope of the Center’s research includes renewable energy resources and the development of new opto-electronic materials. For example, it works to improve solar collection devices, investigates the process design of renewable-energy-driven systems, and develops organic solar cells and special opto-electronic materials. The research outcomes contribute to the development of energy technologies and energy-related systems, such as solar collectors, photovoltaic/thermal hybrid solar systems, solar driven membrane distillation technologies, and third generation solar cells and portable fuel cells.

CENTER FOR DIGITAL LANGUAGE RESEARCH

Director: Kuo, Chin-hwa (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

CROSS-STRAIT FINANCIAL RESEARCH CENTER

Director: Lin, William T. (林蒼祥)

The Cross-Strait Financial Research Center was established in 2006 to enhance research in the area of Cross-Strait finance. The center is affiliated with the TKU Office of Research and Development 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.
STATISTICAL SURVEY RESEARCH CENTER

**Director: Wen, Bor-Shyh (溫博仕)**

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. 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.

THE CENTER FOR EUROPEAN UNION STUDIES

**Director: Dr. Li-Jiuan Chen-Rabich (陳麗娟)**

Tamkang University is the lead university in the field of European Studies in Taiwan. Given that the European Union (EU) has greatly advanced European integration and become one of the largest economies in the world, The Center for European Union Studies was established in 2003 to promote research on the EU and enhance the public’s understanding of the EU. Its tasks include undertaking research projects on the EU, and working with the Graduate Institute of European Studies, Tamkang University, and the European Union Center in Taiwan (EUTW) to organize academic activities and outreach programmes, such as EU lectures and forums, as well as the well-known EU Summer/Winter School and the annual EU Week events.

THE CENTER FOR TECHNOLOGICAL AND OPERATIONAL DEVELOPMENT

**Director: Tuan, Alex (段永定)**

Established in 1996, this Center aims to:
1. Forge close links between academia and industry
2. Provide consulting services for industry and business
3. Conduct academic research
4. Organize local and international conferences

Currently, the Center is conducting several research projects and developing relationships with industry and business leaders. The two major directions in terms of research are “The Applications of Conductive Concrete” and “An Innovative Device for Building Vibration Control.”

The center also developed a solid relationship with Guangzhou University. A joint research center was established in 2008 with a new lab to conduct the conductive concrete research.

CENTER FOR CULTURAL AND CREATIVE INDUSTRIES (CCCI)

**Director: Liu, Hui-chuan (劉慧娟)**

Center for Cultural and Creative Industries (CCCI) is Tamkang University’s portal to cultural and creative industries. It provides students with learning opportunities as well as establishes ties between academia and business in cultural and creative industries in Taiwan. Internally, CCCI carries out
research and development on various aspects of culture and creative industries. Externally, CCCI provides a range of services for the public. It conducts policy research for the government and public sectors, offers creative solutions to local businesses, such as market research, business referrals, intellectual property management, and venture capital investment. At present, CCCI strives to establish a platform that bridges academia and business as well as help businesses identify global opportunities in culture and creative industries.

**RESEARCH AND DEVELOPMENT CENTER OF CONSTRUCTION LAW**

**Director:** Fan, Su-ling（范素玲）

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

**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 previous TKU Graduate Institute of Japan Studies (now the Graduate Institute of Asian Studies) helped train a vast number of diplomats. The newly established Center for Japan Studies, however, will go one step further, by not only extending this tradition of excellence in personnel training, but also working to generate closer academic relations between Japan and Taiwan.

**THE INTELLIGENT AUTOMATION AND ROBOTICS CENTER**

**Director:** Wong, Ching-Chang（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.

CENTER FOR INFORMATION TECHNOLOGY USAGE BEHAVIOR RESEARCH

Director: Chang, Jau-Shien (張昭憲)

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.

TRANSPORTATION AND LOGISTICS RESEARCH CENTER

Director: Tao Chi-Chung (陶治中)

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 the industrial cooperation. 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 MURAKAMIHARUKI STUDIES

Director: Tseng Chiu-kuei (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 the Haruki Murakami research in Taiwan by organizing three Haruki Murakami international symposiums. Although our laboratory’s history has not reached three years yet, 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 academic and facilities sides of Haruki Murakami Studies.
3. Promotion of international academic interchange of Haruki Murakami Studies.
PROGRAMS OF STUDY

CENTER FOR GENERAL EDUCATION
AND CORE CURRICULUM

Director: Wang, Chih-ming (王志銘)

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, 370 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); Han, Kuei-hsiang (韓貴香)

Associate Professors
Hsu, Tsuo-ming (徐佐銘); Wang, Chih-ming (王志銘); Shieh, Philip (謝朝鈞);
Lee, Pei-yee (李珮瑜); Gan, Yung-ying (干詠穎); Sung, Angela Hung-yen (宋鴻燕);
Tai, Carol Chia-jwu (戴佳茹)

Assistant Professors
Wang, Ling-kang (王靈康); Chen, Hui-Yun (陳慧勻)

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 four types of courses: fundamental courses, school-wide core courses, college-specific core areas, and general elective courses.
Fundamental Courses

1. **Chinese Language (3 credits):** This course aims to improve students’ communicative competence and to enable them to express themselves in an articulate and succinct manner.

2. **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.

3. **Education in Information Technology (4 credits):** 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.

4. **The Global Technology Revolution (2 credits):** This course describes the development of science and technology in the 20th century and its potential impact on our future and the environment.

5. **Physical Education (0 credit):** The aim of the course is to promote the "LOHAS health" concept, allowing students to enhance sports knowledge, understanding proper exercise methods to enhance physical fitness, enjoy sports, and develop regular exercise habits in order to achieve lifelong exercise goals.

6. **All-Out Defense Education Military Training (0 credit):** This course includes International Situations, National Defense Policies, Civil Defense, Defense Mobilization and Defense Technology. Through it, we expect to cultivate our students to be virtuous modern civilians who realize the significance of national security and defense.

Core Courses

1. **Global Outlook (2 credits):** This course familiarizes students with concepts relevant to international relations and heightens students’ global awareness and their understanding of the modern world.

2. **Futures Studies (2 credits):** Futures Studies encourages a forward-looking perspective and a view for the future that encompasses society, technology, the economy, the environment, and politics.

3. **Art Appreciation and Creation (2 credits):** 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.

4. **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.

5. **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.

College-specific Core Courses

1. **Classical World Literature (2 credits):** 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.
2. **Natural Sciences (2 credits):** 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.

3. **History and Culture (2 credits):** This course develops students’ ability to view and analyze historical events and helps students gain an objective and practical knowledge of history.

4. **Civil Society and Participation (2 credits):** 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.

5. **Social Analysis (2 credits):** 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.

6. **Philosophy and Religion (2 credits):** 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.

**Common Elective Courses**

Common elective courses are designed according to students’ interests and needs, as well as the prevailing social and economic environment. These courses offer students a hands-on, practical approach to learning.

**The Organization of the General Education Committee**

**The Executive Level**

The General Education Committee consists of a *Director General* (the TKU Vice President of Academic Affairs), a *Deputy Director General* (The Dean of the College of Education) and an *Executive Secretary* (Director of the Center for General Education and Core Curriculum).

**Fundamental Courses and Coordinators**

1. **Chinese Language**
   Coordinator: Chair of the Chinese Department

2. **Foreign Languages and Drills**
   Coordinator: Chair of the English Department

3. **Education in Information Technology**
   Coordinator: Chair of the Computer Science and Information Engineering Department

4. **Global Technological Revolution**
   Coordinator: Chair of the Mechanical and Electro-Mechanical Engineering Department

5. **Physical Education**
   Coordinator: Chair of Physical Education Instruction Section

6. **All-Out Defense Education Military Training**
   Coordinator: Chief of the Office of Military Education and Training

**School-wide Core Courses and Coordinators**

1. **Global Outlook**
   Coordinator: Chair of the Graduate Institute of the International Affairs and Strategic Studies

2. **Futures Studies**
   Coordinator: Chair of the Graduate Institute of Futures Studies
3. Arts Appreciation and Creation  
   Coordinator: Coordinator of Arts Appreciation and Creation courses

4. Learning and Development  
   Coordinator: Chair of the Graduate Institute of Educational Psychology and Counseling

5. Extracurricular Activities and Team Development  
   Coordinator: Dean of Student Affairs.

**College-specific Core Courses and Coordinators**

1. Classics in World Literature  
   Coordinator: Chair of the Department of Spanish

2. Natural Sciences  
   Coordinator: Chairman of Department of Physics

3. History and Culture  
   Course Design Director: Chair of the Department of History

4. Civil Society and Participation  
   Coordinator: Chair of the Public Administration Department

5. Social Analysis  
   Coordinator: Coordinator of Social Analysis courses

6. Philosophy and Religion  
   Coordinator: Coordinator of Philosophy and Religion courses

**Common Elective Courses**  
Coordinator: Director of the Center for General Education and Core Curriculum

**Course Descriptions**

**Fundamental Courses**

**Chinese Language**

**A1376 Chinese Expression (3/0) (0/3):** 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**

**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 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):** This course aims to improve students’ English proficiency in four areas: listening, speaking, reading and writing. In the process of learning English, students will be able to make a connection between language and culture and will develop the ability to think critically.


**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.

**Education in Information Technology**

**E1034 Introduction to Information Science (2/2):** This course comprises several components: (1) an introduction to computer architecture; (2) computer software; (3) computer networking and communications; (4) multimedia; (5) artificial intelligence; (6) information security; (7) information systems; (8) information ethics.

**Global Technological Revolution**

**H0003 The Global Technology Revolution (2/0) (0/2):** This course presents an introduction to the development of science and technology in the 20th century and its impact on our life and environment.

**Physical Education**

**T9869-T9999, U3001-U6000 Physical Education (0/0):** Through this course, students will enhance their sports knowledge and understand proper exercise methods to enhance their physical fitness.

**U6001-U7000 Sport of Leisure and Athletic Practices (1/1):** Through this course, students will understanding how to evaluate and promote physical fitness, enjoy exercise, and develop regular exercise habits to reach lifelong exercise goals.

**School-wide Core Courses**

**Global Outlook**
T0831 Current International Politics (2/0) (0/2): 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.

T0832 Europe in the World (2/0) (0/2): There are three broad areas covered in this course: The European Union (EU) and the global role of the EU in the 21st century; European external relations, including the EU’s relationship with Taiwan, America, Asia, China, Japan, Russia, Australia, India, and Africa; and conclusions and perspectives.

T0833 Global Environmental Protection (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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.

T0836 Political and Economic Development (2/0) (0/2): This course focuses on overall political and economic issues in so-called “third world” countries. We will discuss why some countries are under-developed, what problems they are facing in the course of development, and how to deal with those problems. Development is not an easy concept to define. The course therefore adopts an interdisciplinary approach that integrates politics and economics with cultural and ethical issues.

T0837 East Asia and World Affairs (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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 knot global society.

Futures Studies

T0176 Futures Studies and the Environment (2/0) (0/2): This course focuses on constructing a balanced view of both the environment and the economy. It discusses the following topics: multi-objective concepts, rationality, implications of the environmental crisis, personal value adjustment and the environment, and the importance of morality.

T0864 Environmental Change and Sustainable Development (2/0) (0/2): This course focuses on the development of a technological society and 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 (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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.

T2052 Multiculturalism and the Global Society (2/0) (0/2): This course aims to explore and examine the political, economic, and social impact of the emerging trends of multiculturalism and globalization. It emphasizes that the new cultural empire, in particular American values and the American lifestyle, will gradually influence societies the world over, including Taiwan.

T2159 Health, Leisure, and the Future (0/2): This course focuses on mountain sports in Taiwan and around the world. It introduces the historical and cultural dimensions of mountaineering, and deals with issues such as colonialism, aboriginal policy and identity, gender construction, feminist theory, environmental issues, technology, consumerism, and the effects of military mobilization and national identity on social forms of leisure.

T2162 The Knowledge-Based Economy and Society (2/0) (0/2): Processes of information exchange provide a mechanism for social coordination and facilitate economic exchange as well as political and managerial control. This is just one of the topics discussed in the course. It also covers knowledge-based innovation systems, social coordination, and scientific and market domains.

T2163 Global Futures (2/0) (0/2): The debate on globalization has been going on in a variety of fields for some time. As such a global framework emerges, an increasing number of academic discussions focus on the future of our global society—the framework of cooperation among corporations, governments, and advocacy groups to resolve conflict and create opportunity. In this course, diverse issues regarding global futures will be discussed.

T2187 Futures Studies and the Trend of Sports Culture (0/2): Sport is not only a form of physical activity, but also has implications for economic development, inter-societal competition and global trends. A society’s attitude toward sport reveals a lot about its conventional rituals and beliefs. This course aims to introduce the framework of Futures Studies to explore the multifarious aspects of sports culture, and to develop a solid understanding of this important field of physical activity.

T2189 Classic Readings of Futures Studies (0/2): This course combines basic concepts of futures thinking with literature to encourage students to think critically and to generate student interest in pursuing futures studies.

Art Appreciation and Creation

A0544 Introduction to Music (2/0) (0/2): 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.
A1788 Tradition and Appreciation of Chinese Calligraphy and Painting (2/0) (0/2): Calligraphy, originating in China, is one of the major forms of Chinese art. The ability to appreciate calligraphy allows us access to the spiritual ideas and aesthetics of Chinese painting. The close relationship between calligraphy and Chinese painting influences the historical development and aesthetics of both. In this course, we will identify different styles of Chinese calligraphy and painting in history. We will also discuss the metaphysical aspects of Chinese calligraphy and painting.

F0106 Art Creation and Expression (2/0) (0/2): This course involves four steps: first, the presentation of masterpieces; second, examining the process of creating an art work; third, creating personal works; fourth, a discussion of students’ art projects.

T0334 Digital Content Development (2/0) (0/2): Digital content involves Web content, digital publications, multimedia, blogs, portal sites, and Web design and aesthetics. This course will combine elements of theory and practice.

T0335 Introduction to Visual Arts (2/0) (0/2): This course offers a basic introduction to the history and development of visual arts in Chinese and Western civilization. It presents a general concept of “images” in both of these cultural contexts, as well as introducing the social and comparative history of arts. The course objectives are:
1. Developing basic knowledge of the development of visual arts in history;
2. Understanding the connection among art, culture and society;
3. Comparing concepts of “images” in different cultures;
4. Acquiring the basic concepts with which to appreciate visual arts.

T0336 Introduction to Digital Arts (2/0) (0/2): Digital arts refer to visual images, videos, animations, music, texts and archives. This course offers a mix of theory and practice.

T1287 Music Master Works Appreciation and Interpretation (2/0) (0/2): This course introduces masterpieces of Western music, with a focus on world-class composers and analyses of their musical theories. In this class, students will learn to interpret and appreciate the art and logic of Western music.

T2006 To Explore the Region of Singing (2/0) (0/2): This course aims to teach students correct ways of singing, and to introduce them to different types of vocal music, such as jazz, musical, lieder, folk, Chinese art songs, and opera.

T2009 Techniques and Appreciation of Sculptural Art (2/0) (0/2): This course introduces sculptural art as a three-dimensional object in representational or abstract form.

T2011 Chinese Jade Artistry (2/0) (0/2): Through studying the cultural connotations related to Chinese Jade, students learn about historical factors affecting such artifacts and realize the significance and cultural value of Chinese Jade. Students also enhance their ability to understand and appreciate the splendor of Chinese Jade.

T2013 The Appreciation of Western Opera (2/0) (0/2): This course introduces the origin and development of Western opera and its stories and authors. Students will also learn to analyze and interpret different operatic styles.

T2014 The Art of the Application of SHU-FA (2/0) (0/2): This course introduces different applications of traditional calligraphy to arts.

T2021 The Process of Western Art (2/0) (0/2): This course offers an introduction to various periods of Western art, including Classic, Byzantine, Romanesque, Gothic, Renaissance, Baroque, Rococo, Neo-classic, and Romantic. It focuses on painting, sculpture, architecture, craft, and others.

T2104 The Art of the Piano (2/0) (0/2): The piano, a unique musical instrument, has played an important role in our life and in every corner of our society. Since the Baroque time, the piano has emerged as a musical instrument that has played in almost every musician’s performance for three
hundred years. Chopin is one of the greatest musicians of all time. He composed mostly for piano performances and his music enchanted people world over. This course intends to guide students through the essence, spirit, and beauty of piano music, including classical, popular, new age and jazz styles. We will discuss how a pianist becomes a “real” artist. Topics include personality traits, career choices, and internal conflict. Class demonstrations and live concerts will be used as methods for course evaluation.

T2105 The Dialogue Between Music and Art (2/0) (0/2): This course provides ways to explore music, painting, literature, and drama through an analysis of their common elements.

Learning and Development

T0863 Learning in University (2/0) (0/2): 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.

Extracurricular Activities and Team-ship Development

T0800 Community Service (2/0) (0/0): Service-learning provides a context for talking about learning in terms of not only what students know but also what they are able to do. Critical to this type of learning is allowing time for students to reflect on their service experience. Reflection time helps students make the connection between classroom and community learning, and ensures they understand the extent to which they can create positive change.

T1999 Operation and Management of Student Clubs (2): Operation and Management of Student Clubs provides students with basic concepts of how student clubs operate. This course not only provides students with knowledge of student-club management, but also encourages them to join and manage clubs, and to promote the development of student club activities in Tamkang University.

(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.

College-specific Core Courses

Classics in World Literature

A0377 Classical Mythology (0/2): 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.

**A2682 The Contemporary Interpretation of the Chinese Classics (2/0) (0/2):** This course can be divided into four broad areas: traditional cultures, the spirit of humanitarianism, literary aestheticism, and creative thinking. Students will be introduced to selected classical writings and attain knowledge of traditional teachings, realize the importance of humanitarian issues, increase their ability to appreciate literature, and unleash their capacity for creativity.

**F0807 Japanese Literature and Translation (2/0):** 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 (2/0):** 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 (0/2):** 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 (2/0):** 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 could be a good leader in this digital and global age.

**F1135 Selected Readings in German Literature (I) (2/0):** 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 (2/0):** 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 (2/0):** The aim of this course is to read and discuss the most famous French novels during the 18th, 19th and 20th century.

**Natural Sciences**

**S0349 The Spirit of Science (2/0) (0/2):** It is expected that by taking this course, students—regardless of their majors—will gain a better grasp of the essence of science and be able to carry out practical scientific applications.

**S0353 Living Logic (2/0) (0/2):** This course covers principles of deduction and induction, relations among proof and logic, and reflections on the process of thought.

**S0358 Physics and Living (2/0) (0/2):** This course covers the following topics: mechanics, waves, heat, electricity and magnetism, light, atoms and lasers, nuclear physics, relativity, and superconductivity.

**S0362 Exploring the Universe (2/0) (0/2):** 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.

**S0363 Enjoying Mathematics (2/0) (0/2):** This course presents an introduction to the history and development of mathematics by exploring key mathematical problems, popular conjecture, and educational games.
S0366 Chemistry and Life: Chemistry, Inorganic Materials and Society (2/0) (0/2): This course focuses on the relationship between chemistry, inorganic materials, and society. The following topics are introduced: semiconductors, metals, superconductors, optical and magnetic materials, ceramics and battery materials.

S0368 Chemistry and Life: Chemistry, the Environment and Society (2/0) (0/2): This course centers on local environmental issues. It elucidates such issues, discusses related social problems, and proposes possible solutions.

S0369 Chemistry and Life: Chemistry, Medicine and Society (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): This course presents an introduction to recent developments in DNA, genes, modern biotechnology, and general health care.

S0727 Light, Photography and Vision (2/0) (0/2): This course offers an introduction to the basic properties of light, photography, holography, eyes and vision, and optical instruments.

S0738 Chemistry in Daily Life (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): From transportation to nuclear power, from computer to biotechnology, this course demystifies the operation of numerous instruments and machines. Designed for students from different academic backgrounds, this course helps students establish a positive and informed attitude of the new technologies that affect our collective future.

S0749 The Semiconductor in Living (2/0) (0/2): This course introduces concepts related to the semiconductor, microelectronics, integrated circuitry, and the computer. Electronic devices containing microprocessors will also be discussed.

S0750 Mathematics in Life (2/0) (0/2): This course uses examples to introduce students to the following topics: probability and expectation, confidence intervals, the history of infinity, strategic thinking, the history of e and π, the chaotic phenomena, fractals geometry, cryptography and Euclidean geometry, as well as its application.

S0751 Life Sciences: The Era of DNA Technology (2/0) (0/2): This course offers an introduction to recent developments in DNA-related technology. It also views the impact of such developments on life sciences, medicine, and society from legal and moral perspectives.

S0784 Understanding Data (2/0) (0/2): This course introduces the concept behind statistics, namely, how data is collected and summarized, and how information is extracted from such data.

T2166 A Voyage to Science (2/0) (0/2): 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 scientific civilization.

**T2167 Chemistry and Life: Chemistry, Food and Society** (2/0) (0/2): This course introduces basic chemistry concepts related to 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.

**History and Culture**

**Category I: History of Taiwan**

**A2507 History of the Development of Taiwan** (2/0) (0/2): This course covers four periods of the history of Taiwan: the first, the period of Spanish and Dutch occupation; the second, the period of the Ming Dynasty and Ming Royalist control; the third, the Qing Dynasty; the fourth, the period under Japanese rule. It explores the effects of these four periods on the development of Taiwan.

**A3454 The Exploration of Taiwanese History** (2/0) (0/2): This course is designed to increase students’ general knowledge of Taiwanese history and culture.

**Category II: History of Society and Culture**

**T1608 An Overview of Modern Publications in Taiwan** (2/0) (0/2): This course introduces the development of modern publications in Taiwan and helps students develop an appreciation of publications published between 1949-2005.

**A1813 European Civilization** (2/0) (0/2): This course presents an introduction to Western civilization with a focus on its rise and decline.

**A2020 Aesthetics: Sinological Arts** (2/0) (0/2): This course discusses paintings, calligraphy and other related topics in ancient China.

**Category III: Persons in History**

**A2062 Chinese History and Historical Figures** (2/0) (0/2): This course places historical figures in their historical contexts, enabling students to view the interaction between people and time.

**A2368 Modern Historical Events** (2/0) (0/2): Through analyses of important historical events and aristocracies of the time, this course reveals a number of historical truths, describes the relationships between various historical events, and discusses the features of key historical figures.

**A2505 Western History and Historical Figures** (2/0) (0/2): 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.

**Civil Society and Participation**

**M1179 Nonprofit Organization** (2): The surge of ‘non-profit organization (NPO) 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 it’s 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 a 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. Teacher and students will discuss real cases of civil participation in modern policy that they encountered abroad or in Taiwan.

T0813 Civil Culture (2): What does civil society mean to us? Is there a global civil society? What is the role citizens play 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 on international relations? These are the questions we will try to answer in this course. In the classes, students will learn general concepts regarding civil society and explore different dimensions of this topic. A central focus will be placed on social norms and activities.

T0873 Gender, Life and Law (2): Lectures in this course will provide students with essential and practical legal knowledge, as well as legal cases related to family law, civil law, and criminal law. By exploring such cases, students will better understand legal issues such as abortion, domestic violence, and others.

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 issues emerging from the interaction between technology and law.

Social Analysis

A1493 Taiwanese Society and Culture (2/0): 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 of social, economic, and political development in Taiwan; (2) Taiwanese culture.
A1636 Interpersonal Relationships and Communication (2/0) (0/2): This course aims to explore the nature and interactional rules between individuals and families within a society. It will also explore the possibility of improving these relationships through the development of interpersonal communication skills.

A1970 Introduction to Economics (2/0): 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 (2/0) (0/2): The course will first help students understand how an individual’s behavior is shaped by groups and by the social environment. Various social psychological theories will be introduced to enhance self-understanding and improve students’ social skills.

T0161 Culture and Mental Health (2/0) (0/2): This course aims to explore the multiple facets of mental health. It provides discussions on how individuals adjust themselves to the environment using cultural, social, and medical models.

T0169 Human Rights and Social Justice (2/0) (0/2): This course aims to investigate the relationship between human rights and social justice. Special attention will be paid to the following questions: (1) What is the relationship between human rights and social, economic, and cultural rights? (2) Given that human rights (the right to personal security, freedom from torture, etc.) are fundamental entitlements, what kind of cultural, social and economic inequalities are present to prevent us from realizing them? (3) How can we set up cultural, social and economic equalities (social justice) to ensure the individual’s right to liberty? Through such enquiries, students are encouraged to discuss practical issues in daily life.

T0189 Media, Mass Communication, and Culture (2/0) (0/2): This course offers an introduction to media and mass communication, focusing on different communication cultures in different countries.

T0350 Society Changes and Social Education (2/0) (0/2)

T0351 Gender Roles and Relationships (2/0) (0/2): 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 (2/0) (0/2): This course focuses on human nature when faced with war. It will discuss this topic from different perspectives, such as society, psychology, arts, and others. The course centers on human nature, but also analyzes different wars, their causes, and impacts on people.

T0830 Well-being and Economics (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): This course examines changes in human cognition, behavior and emotion, and causes of these changes. Some major areas of human development and major psychological theories will be introduced in the course, with a focus on topics relevant to personality and social development.

T1822 Principles of Psychology (2/0(0/2): In this class, students will learn how our brains function, how we become anxious during an exam, what an IQ score means to us, why we develop psychological symptoms, how our personality changes, what abnormal behaviors are, how we perceive others, and many more factors that affect our lives.
T1832 Principles of Sociology (2/0) (0/2): The course helps students understand the relationships between individuals and the society. The behavior of an individual occurs in a societal context of institutions, culture, groups, and interactions that shape what people do and think. In the course, a brief introduction to the general theories and research methods in this field will first be offered. Then, some current important topics relevant to sociology will be addressed.

T1891 Introduction to Politics (2/0) (0/2): This course offers an introduction to politics, interest groups, political parties, and election systems. It also describes the typology of political systems, political cultures, as well as issues related to public policy.

Philosophy and Religion

1. Basic Courses

T0099 Ethics (2/0) (0/2): Ethics inquires into the principles and presuppositions that operate in our moral judgment. When we say something is wrong or it may lead to bad results, what is the principle or are the principles upon which this right-wrong distinction rests? Can it be defended? These questions will be addressed in this course.

T0100 Introduction to Philosophy (2/0) (0/2): 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 (0/2): 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 (2/0) (0/2): 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 view points.

T0339 Introduction to Religion (2/0) (0/2): 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 (2/0) (0/2): 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 (2/0) (0/2): 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 Business Ethics (2/0) (0/2): This course introduces basic doctrines of moral philosophy by presenting actual cases in the business arena to help students understand the role these doctrines play in the business world and how relevant issues may affect their personal lives. The course aims to cultivate students’ abilities and practices in reflection and making decisions on moral issues.

T2005 Literature and Philosophy of Eroticism (2/0) (0/2): 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.

**General Elective Courses**

**T0234 Safety and Health Education (2/0):** One of the goals of this course is to familiarize students with basic concepts of environmental safety and hygiene, and to help students understand and control potential harmful factors, including physical, chemical, and biological factors.

**T0643 Social Service Learning: Caring and Sharing (2/0) (0/2):** The purpose of this course is to help students make the quality of their life better, and to improve their abilities, beliefs, and social skills. Many activities in the course help students reflect and develop their own personality and social skills.

**T0645 Forest Ecology and Tree Protection (2/0) (0/2):** Trees, like human beings, are exposed to risks of fatal illness in their life. These threatening factors may weaken trees’ growth, deteriorate quality of scenic spots, jeopardize the life of trees, or even worse, cause forest growth decline and extinction. On the other hand, trees are closely related to our lives. In the ancient agricultural society, the main supply of construction material and fuel was from trees and forests. In modern society, trees in developmental areas, particularly the old ones, provide spectacular views and offer habitats for birds and insects, promote convenience and quality of life, and even bring inspiration and comfort to residents. Therefore, knowledge and implementation of forest ecology and tree protection is very important to our daily lives. This course will provide students with knowledge and practices related to tree planting and protection, and students will better understand how to take care of trees and identifying with nature by adopting trees. Course content will cover related theories in forest ecology, tree diseases, mycology and entomology. Through knowledge and practices provided in this course, we hope students will better appreciate old trees on campus.

**T0646 Construction of an Ecologically Diversified Community (2/0) (0/2):** This course aims to give a general account of Taiwan’s natural features as well as its rich ecological resources. It will also explore factors affecting the success or failure of self-improvement programs in different communities so as to provide information on the construction of an ecologically diversified community.

**T0917 Local Culture and Creative industries (2/0) (0/2):** This course aims to introduce to students: (1) The concept of community building and development. (2) The formation of local cultural resources and their development. (3) Local cultural conditions and trends in the creative industries. (4) Analysis and comparison of culture and creative industries in the period under Japanese government. (5) Issues relevant to local culture and creative industries.

**T1234 Minority Groups and Social Welfare (2/0):** The main objective of this course is to discuss the issue of minority groups and the limitations of social welfare politics in Taiwan.

**T1923 Volunteer and Social Service (0/2):** This course teaches undergraduate students about how the disabled use technology in everyday life. In the course, we encourage students to create an active program based on problem-solving methods used by NGOs. Students will learn how to serve as volunteers and work in the area of social service through practical tasks and assignments.
COLLEGE OF LIBERAL ARTS
COLLEGE OF LIBERAL ARTS

Dean: Lin, Sinn-cheng (林信成)

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 Western scientific knowledge and Eastern philosophy.

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 slogan “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 Chinese Studies, Cultural Tourism, Innovative Publishing, Audio-visual Entertainment, and Digital Content.

Future Development

At the TKU College of Liberal Arts, we not only help students develop an in-depth understanding of the subject areas, but also nurture 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 sights on a career in the cultural and creative industry. Couple this academic environment with Tamshui’s majestic mountain scenery, and it is no surprise that Tamkang University has become the educational center of Northern Taiwan.

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.

A2732 Image Reading (2/0): This course provides students with basic theories on reading and comprehension. It trains students to better comprehend symbols and combines theoretical and practical elements of picture comprehension, which students can then apply to the culture and creative industry.

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: Yin, Shan-pei (殷善培)

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
Professors
Chao, Wei-min (趙衛民); Chen, Ching-huang (陳慶煌); Chou, Yen-wen (周彥文);
Ho, Chim-lan (何金蘭); Huang, Fu-shan (黃復山); Kao, Po-yuan (高柏園);
Lu, Kuo-ping (呂國屏); Yen, Kun-yang (顏崑陽);
Chang, Shung-in (張雙英); Tsui, Cheng-tsong (崔成宗);
Chang, Ben-hang (張炳煌)

Associate Professors
Chen, Shi-hwa (陳仕華); Ma, Ming-hao (馬銘浩); Ni, Tai-ying (倪台瑛);
Yin, Shan-pei (殷善培); Shu, Wei-ping (許維萍); Chen, Ta-tao (陳大道);
Kao, Wan-yu (高婉瑜); Chou, Der-liang (周德良)

Assistant Professors
Huang, Lee-ching (黃麗卿); Tseng, Yu-fu (曾昱夫); Hou, Ru-chi (侯如綺);
Cheng, Po-yen (鄭柏彥); Lin, Wei-shu (林偉淑); Pu, Yi-nan (普義南);
Li, Hui-Ru (李蕙如); Lo, Ya-chun (羅雅純); Huang, Wen-chien (黃文倩);
Liu, Yi-chieh (劉依潔)

Degree Requirements
1. Requirements for a B.A. in Chinese:
   Students must complete 139 course credits, including 95 credits from required courses, 20 credits from elective Chinese literature courses, and 24 credits from 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.” (This requirement also applies to students who entered the program after the 2006-2007 academic year).

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. (This requirement also applies to students who entered this
program after the 2006-2007 academic year).

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.

A0149 Wen Sin Tiau Lung (2/2): This course provides a theoretical framework to explain the meaning and value of the famous Chinese literary work The Literary Mind and the Carving of Dragons.

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.

A0175 Japanese (II) (2/2): This course exposes students to various aspects of Japanese culture and teaches basic Japanese vocabulary and sentence structure. It trains students in the basic areas of “listening,” “speaking,” “reading,” and “translation.”

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

A0380 The Poetry of Li Shang Yin (2/2): This course centers around three primary topics: 1) An introduction to Li Shang Yin; 2) Exploring how Li Shang Yin’s poems gained renown throughout the Chinese-speaking population; 3) Learning how to read and interpret Li Shang-yin poems and analyzing his poetic style.

A0381 The Poetry of Tu Fu (3/0): This course studies and explores the poems of well-known Chinese poet Tu Fu.

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 Zì. (2) An analysis of Xun Zì’s famous interpretation of certain texts and ideas (3) Modern interpretations of “Xun Zì”—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.

A0713 Shih Ching (2/2): This course will explore the well-known poetry classic ‘the Book of Songs’. It is a year-long course that is divided into two semesters. In this unit, we will focus on: (1) A general overview of the Book of Songs; (2) A chapter-by-chapter breakdown of this classic to explore the meaning of Chinese culture and observe the social context at the time as compared with modern society.

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.
A0804 Yueh-Fu Poetry (2/2): Yueh-Fu Poetry is a general term referring to Chinese folk songs that contain verse poetry. In ancient times, the term “Yueh Fu” denoted the government agency responsible for composing and performing folk music. However, throughout the ages, Yueh Fu verse poetry has been a popular source of entertainment. This course will cover 10 to 15 topics designed to allow students to appreciate and analyze the characteristics of Yueh Fu poetry and verse writing skills.

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, it broke up the superstition of fortune-telling and the fear of death, 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 Phonoloy (2/2): Through the phonology of the media, students will be able to recognize and understand the language of the phonological structure, phonology books, audio systems, understand the link between dialects using phonology, and to appreciate the beauty of Chinese literature.

A0902 Romance of the Three Kingdoms (2/0): “The Romance of Three Kingdoms” was China’s first long serial-chaptered novel. Through this course, students will come to appreciate the wisdom and aesthetic heritage of ancient China. Moreover, the master works discussed in this course set a paradigm for modern day business leadership and management.

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’.

A1224 Selected Readings in Modern Literature (0/2): This course aims to guide students to understand fiction theory and narrative systems, to develop their writing potential through extensive reading and analysis of authors’ theories and writing styles in modern Chinese fiction. This course also leads students through continual practice to become trained professionals in the field of literature.

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.

A1486 Classic Novels (0/2): This course aims to explore ancient classical Chinese novels, their unique characteristics, as well as their impact on later generations of writers and published novels. At the same time, it also aims to help students interpret classic novels from various eras in an attempt to illustrate the social and cultural value of such works.

A1585 Selected Reading of Shi Shu (2/2): Through this course, students will learn about basic Confucian moral principles.

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

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.

A2458 The Selected Readings of English Sinology Writings (2/0): This course introduces to students 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-forth period.

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.

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

A2625 Poetry, Calligraphy, Painting and Cultural Creative Industry (0/2): This course describes the relevance of poetry 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 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.

A2681 San Yan and Er Pai (3/0): Taiwanese universities rarely provide courses that focus on classical Chinese novels. Although the department offers courses that help students interpret major classics, such as “Three Kingdoms,” “Dream of Red Mansions,” and “Lonely,” regular prose novels are often overlooked as the primary content for literary courses in Taiwan. This course attempts to counter this imbalance by presenting an in-depth study of Chinese novels from the comparatively recent Ming Dynasty.

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.

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.

A2224 Selected Topics on The Prediction of The Ancient Periods Stud (2/2): The course is a thorough introduction to the following topics: Chinese prediction, Tui Bei Tu, the application of five strategies in prediction, which includes the art of face reading, Chinese feng shui, and mingsh (fate).

A2703 Documentary Studies in Literature (2/2): This class tries to introduce what the document of literature is.

A2705 Special Study on Parallel Prose (2/2): The course is helping students to research the subjects about the meaning, history, value, culture, and the theories of parallel prose.
A2707 Special Topics on Modern Poetry (2/2): Ignorance of poetics is always a misfortune. Artistic creation and theory often reinforce each other.

A2709 Special Topics on Graphics and Literature (2/2): This course is the main image to Chinese literature through literature analysis and explanation of the image value, increasing the depth and breadth of literary studies, and interactive sense through the theoretical literature and images have a positive meaning.

A2710 Topics on Overseas Chinese Literature (2/2): This course introduces the novels written by overseas Chinese specifically from USA. It focuses on the history of overseas Chinese literature as well as the well-known novelists and their works.

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 LianJu; these written calligraphy couplets are from the Ming and Qing dynasties by famous calligraphers calligraphy couplet written research problems.

A2712 Traditional Arts Cultural & Creative Aspects (0/2): This course focuses mostly on the traditional arts of calligraphy and painting as the essence of the research and rich content.

A2713 Cultural Linguistics (2/2): This course uses the medium of Chinese, to enable students to recognize and understand the structure of Chinese and the cultural meaning of the ancients defined in the mode of thinking to understand, and appreciate the beauty of Chinese. This knowledge of Philology is applied to language teaching, cultural communication, cultural and creative industries and academic research.

A2716 Special Topics on the Four Major Categories (2/2): This course discusses the curriculum and the context of Si Ku Quan Shu and it’s influence to the related research areas. The research associated with "Quan Shu" is actually including summary, context, index, and bibliography. This class also introduce the cultural speciality associated with Si Ku Quan Shu.

A2719 The History of Chinese Intellectual Debate (2/2): This course attempts to cover several strands of academic history through debating, exploring, restoring and clarifying the various academic histories. The first stage of treatment covers the begging to the Wei and Jin, Qin. The second stage of treatment to the cover debate since the Sui and Tang to the Republic.

A2825 Special Topics on Globalized Diet (2/2): This course explores the food culture in and outside of countries, the evolution of various ethnic groups and their causes; the concept of the global village and its impact on the global food culture and the globalization of food produces all kinds of facets.

A2826 Special Topic on Pre-Ch’in Confucianism (2/2): This course is designed for the analysis of the characteristics of Chinese Confucianism, and its interpretation systems theory.

A3367 Selected Topics on The Records Coming Out of an Excavation (2/2): Teaching purpose of this lesson, when the aspirant to why the ancient classics and their rheological changes, the energy charge of its Outline the essentials, through mutual discussion with the students of teachers to teach, and then asked for Research and Treatment of various learning history through Problem-solving abilities of the culture.

A3533 Special Topic on Culture and Society (2/2): The objectives of this course include: (1) to develop students’ basic conceptions of culture and society; (2) to equip students with a comprehensive understanding of cultural studies and sociology; (3) to familiarize students with research methods on cultural studies and sociology; (4) to provide students with relevant background knowledge, such as Kai-Shu Chinese Confucianism, Taoism, cultural and social thought, and Western sociology, as well as literature and art.

T8000 Thesis (0)

Ph.D. Program
A1738 Study in Chinese Mythology (2/2): The curriculum of Chinese Mythology is a systematic study of the myths. The content includes culture, history, folktales and religions.

A2073 Aesthetic Theory in China and the West (2/2): This course provides an overview of macro-study and micro aesthetics.

A2413 Selected Topic 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 of management.

A2706 Special Topic on Chinese Literary Criticism (2/2): This course will firstly introduce the whole history of Chinese literary criticism. Secondly, it will choose the most influential books to be the topics of discussion in the classroom. Finally, it will dig out their special points, functions, and summarize the characteristics of Chinese literary criticism.

A2832 Special Topic on Exploring the Origin of Text (2/2): This course leads students to explore the secrets of the origin of the text at its earliest appearance.

A3546 Selected Topics on Chinese Stylistics (2/2): The course takes “Ancient Chinese Stylistics” as its scope.

T8000 Dissertation (0)
DEPARTMENT OF HISTORY

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

Chairman: Lin, Chen-jung (林呈蓉)

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

Professors
Huang, Jiann-chen (黃建淳); Lin, Chen-jung (林呈蓉)

Associate Professors
Liou, Tzeng-chyuan (劉增泉); Wang, Yueh (王欽); Lin, Huang-ta (林煌達);
Wu, Ming-yung (吳明勇); Tang Yao-tsung (唐耀棕)

Assistant Professor
Kao, Shang-wen (高上雯); Lee, Chi-Lin(李其霖); Lin, Chia-chi (林嘉琪); Ku, Yi-Ching (古怡青)

Degree Requirements

1. Requirements for a Bachelor’s degree in History:
   A student must complete of 135 credits of courses, including 91 credits of required courses and 44 credits of elective history courses.

Required courses:
A. First year:

B. Second year:
   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, 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 Eastern Asia, Digital History Data, History of Contemporary China, 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 train 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 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, the Five Dynasties and Ten Countries period history events.

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 Eastern 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 Taiwan’s Oceans and technology. Students will understand Taiwan’s Ocean and technology and then continues to extend 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.

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 study of Chinese history.

A2835 The 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, social transition to explain how different cultures in Taiwan were formed.

A2836 The 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, lawsuit, etc., will all be touched upon. It’s an advanced course for more understanding and discussion.
DEPARTMENT OF INFORMATION AND LIBRARY SCIENCE

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

Chairman: Wang, Mei-yu (王美玉)

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
Huang, Hong-chu (黃鴻珠) ; Lin, Sinn-cheng (林信成) ; Wang, Mei-yu (王美玉)

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

Assistant Professors
Chang, Hsuan-Pu (張玄菩) ; Chen, Ya-Ning (陳亞寧)

Course Descriptions

Undergraduate Courses

A0055 College and University Libraries (2/0): 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.

A0067 School Libraries (0/2): Discussion of elementary and secondary school library problems, personnel requirements, budget planning, and design of facilities.

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.

A0561 Indexing and Abstracting (0/2): 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 (2/0): 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 (3/0): 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 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 publishing industry, our emphasis is on the publication as an integrated unit.

A1925 Chinese Bibliography (2/0): This course introduces the function and format of Chinese traditional bibliography and a comparison of different bibliographies.
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 in 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 (2/0): 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 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 (0/3): 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 on the theoretical but also on 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 (2/0): 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 (2/0): 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.

A2694 Arrangement and Description of Archival Documents (2/0): 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 of 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 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 analyse 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.

A3396 Data Organizations and Structures (2/0): This course focuses on data structures. The course
highlights the application of library automation systems that apply the concepts and techniques of data
structures. Linked lists, stacks, queues, binary trees, B-trees, hashing, and searching and sorting will be
introduced.

A3397 Introduction to Archival Studies (2/0): 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 (2/0): 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.

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 Data Base (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 in 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 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.

A2089 Seminar on Information Behavior (0/3): 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 (3/0): 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.

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.

A2584 Introduction to Library and Information Science (2/0): This course introduces the development of library and information science; demonstrate 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.
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 a 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.

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.

A3422 Informetrics (0/2): 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.

A3560 Seminar on Children’s Library Services (0/2): This course offers an advanced study of standards, trends, services, resources and evaluation of the children’s library. It conducts an evaluation of library materials for children with a special emphasis on service for children in school and public libraries. Techniques for assisting in planning and carrying out of reading programs and story hours will also be covered in class.

A3570 Qualitative Research Methods (0/3): This course introduces the characteristics, principles and process of qualitative research. Several data collection methods are also discussed.

T0081 Research Methodology (2/0): This course is designed to prepare postgraduate students for performing information and library science research. This includes identifying important research questions, critiquing research ideas and designs, planning and conducting substantive research investigations, and communicating research ideas and results.
DEPARTMENT OF MASS COMMUNICATION

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

Chairman: Chi, Huei-chun (紀慧君)

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
Chao, Yaly (趙雅麗)

Associate Professors
Chi, Huei-chun (紀慧君); Wang, Weitsy (王慰慈); Yang, Mingyu (楊明昱);
Tang, Da-Lun (唐大崙); Hung, Jenn-jia (黃振家)

Assistant Professors
Hsu, Chuan-yang (許傳陽); Chen, Yulin (陳玉鈴)

Lecturers
Ma, Yu-pei (馬雨沛); Wang, Wei-kang (王維綱)

Degree Requirements

1. Requirements for a B.A. degree of in Mass Communication:
   Completion of 145 credits of courses, including 90 credits of required courses and 21 credits of elective courses.

2. Requirements for a Master’s degree in Mass Communication:
   Completion of 32 credits of courses, including 11 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 “language-image” conversion, understanding the use of images is vital in digital multimedia environment. Hence, the process of conveying 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 purpose, 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 (3/3): 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 (3/0): 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 (2/0): 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 (0/2): This course emphasizes both writing theory and practical experience with scriptwriting (movies, TV show, plays), with special attention to the arrangements of characters and scenes.

A1780 Off-campus Practicum in Media (0/2): 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.

A2280 Advertising Creativity (0/2): Advertisement aims to communicate a message persuasively. The objective of this course is to instruct students how to link the characteristics of a product with the needs of the consumers. This link will lead the way to make an effective advertising motif, and the motif could be further developed into a set of persuasive advertising messages. Consequently, advertisers can successfully sell their products or services.

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.

**A2384 Special Reporting and Project (0/2):** This course emphasizes training of special reporting and project skills and concepts by means of consistent practice and operation, as well as class discussion and lecture.

**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.

**A2522 Production of Audio Visual Program (2/2):** This course teaches students characteristics of a TV program, TV production, procedures, models, pre-production planning and strategy, videotaping, live-coverage, post-production, editing, wound-effect, special effects, TV programs and viewers.

**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 (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.

**A2527 Reporting on International Affairs (2/0):** This course introduces the reporting of international news on political affairs and business. During the course, printing media, electronic media, and digital media will be reviewed.

**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 (2/0):** 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.

A2543 Introduction to Message Design (0/2): Message is a sign pattern for meaning communication, including language (verbal), text, image, action, etc. A message contains meaning itself and between the lines. Message design is to make cognition and emotional connections between message sender and receiver, so to achieve a communication effect. There are two means to achieve communication, with face-to-face and medium. This course discusses message meaning and its applications covering text, sound, and image in printing media, electronic media, and digital media. With different media, students learn in which way the content is being generated and understood. To help students construct a learning direction in the future, the course emphasizes individual research and exploration. Attaining the linkage ability of theory versus reality and problem solving through discovery, analysis, resolution and application process.

A2544 Introduction to Human Communication (2/0): 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.

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 course is designed for communication majors to better handle digital media, 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.

A3450 Consumer Behavior (2/0): This course provides a basic introduction to consumer behavior theory and the process of consumer behavior.

A3529 Film Aesthetics (0/2): 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.

B0260 Organizational Behavior (2/0): This course aims to provide students with essential theoretical fundamentals and practical skills in an organizational context.

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 (3/0): 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.

A2377 Statistic Method of Social Sciences (0/3): This course offers an introduction to the statistic principles and their applications. Students will be trained in the statistic based thinking to conduct data analysis.

A2487 Culture Industry Seminar (0/3): The purpose of this course is to teach the process of producing a project in the culture industry. The class will focus on the “methods of knowing” and studying cultural phenomena. In this course, a wide range of culture industries, theoretical principles and methods that serve as the foundation for practicing the project will be reviewed. In particular, class lectures, presentations and assignments will emphasize conceptual and operational features of figuring out a solution in the industry.

A2488 Special Issues in Film and Culture (0/3): 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 (0/3): 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.

A2546 Seminar in Communication Careers (1/1): This course aims to help students understand the role and nature of communication. It focuses not so much on existing communication professions but more on the process of discovery itself. Students are encouraged to rethink about the most currently popular “myths” on “what communication is.” Students are also expected to develop a deeper understanding of the nature of communication and of the ways to pursue a professional career in communication.

A2766 Cross Media Marketing Communication (0/3): 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.

**A2767 Digital Network and New Media (0/3):** This course covers the practical and theoretical issues associated with the digital network and new media. New media includes many different types of Web 2.0 technologies such as social media, search engines, mobile applications, Wiki, Twitter, online games, and online book etc. We will primarily take a social scientific approach to digital communication. The course will be broken into two parts: in the first part of the course, we will investigate the concept and materiality of the network society and various dimensions. We will study the interaction between communication technology, society, economy, politics, and culture in an interdisciplinary and cross-boundary perspective, which shape and are shaped by the development of new media. In the second part of this course, we will focus on the analysis of new media practices, the social structures that emerge when people use these applications, and the design and implementation issues associated with constructing digital communication technologies.

**A2768 Psychology of Vision (0/3):** 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 (3/0):** 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 (3/0):** 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 Communication Research Methods (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 (0/4)**

**A2770 New Media Creative Marketing (3/0):** In this course, we will start to describe about “new media.” And what kind of characteristics of new media are being manipulated, such as networkable, dense, compressible, and interactive in the creative marketing. Examples may be the Internet, websites, computer multimedia, video games, augmented reality. We will search the marketing cases and research papers to find how to create the new media combining Internet accessible digital text, images and video with web-links, creative participation of contributors, interactive feedback of users and formation of a participant community of editors and donors for the benefit of non-community readers. Finally we find out that the value of the new media marketing is the real-time generation of new and unregulated tool.

**E3003 Independent Study (0/1):** This course introduces the integration of resources in relation to the needs of research and helps the students to develop their interests in the issues about the communication research. The students will be trained for the independent study to conduct their researches.
DEPARTMENT OF INFORMATION AND COMMUNICATION

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

Chairman: Sun, Chien-yu (孫虁鈺)

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
Jow, Mei-ling (卓美玲); Liu, Hui-chuan (劉慧娟); Shih, Chien-chou (施建州);
Sun, Chien-yu (孫虁鈺)

Assistant Professors
Yang, Jyh-ming (楊智明); Lai, Hui-ju (賴惠如); Chen, Yi-Wen (陳意文)

Lecturer
Lu, Hsian-fu (盧憲孚); Guy M. Redmer (雷凱)

Degree Requirements

1. Requirements for a B.A. degree of Information and Communication:
   Completion of 134 credits of courses, including 79 credits of required courses and 55 credits of elective courses.

2. Requirements for a Master’s degree of Information and Communication:
   Completion of 30 credits of courses, including 12 credits of required courses and 18 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.

Facilities
The Department has its own Creative Digital Media Laboratory (CDML)

Course Descriptions

Undergraduate Courses

A1084 Introduction to Sociology (0/2): This course offers an introduction to the basic concepts and theories of sociology.
A1209 Communication Theories (2/0): This course reviews major theories and models of studying processes, functions and general principles of communication.

A1718 Message Design (0/2): This course explores creative ways to design messages for various interactive media.

A1780 Internship (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.

A1930 Introduction to Human Communication (2/0): This course provides an overview of concepts and principles in human communication studies.

A1931 Information, Communication and Society (0/2): This course explores the interplay of new media, information technologies and digital art forms in the information society.

A1970 Introduction to Economics (2/0): This course offers an introduction to the basic concepts, models and theories of microeconomics and macroeconomics.

A2008 Digital Sound Effects (0/2): This course introduces the general principles, specific techniques and hands-on practice of digital music production.

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

A2167 Information and Communication User Analysis (0/2): This course discusses approaches to researching and analyzing information and communication users’ behavior patterns.

A2209 Psychology of Communication (2/0): This course discusses concepts and theoretical constructs in psychological theory relevant to the psychological and cultural aspects of communication.

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 (2/0): 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.

A2315 Selected English Readings in Information and Communication I (1/0): 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.

A2340 Interface Design (0/2): This course explores relevant interface design issues concerning interactive computer systems from a user's perspective.

A2364 Principles of Color and Design (2/0): This course introduces fundamental concepts of color and design.

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 (2/0): This course introduces the basic concepts and principles of the Active Server Pages (ASP) programming design.
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 (2/0): This course introduces production techniques and provides hands-on experiences in developing digital content projects.

A2406 Web-Based Interactive Programming Design (2/0): This course introduces principles and practices of web-based interactive programming design.

A2409 Introduction to Photography (2/0): This course explores theories of photographic materials and processes, and introduces photographic techniques and equipments.

A2410 Integrated Project in Digital Content II (0/2): This course introduces advanced production techniques and provides hands-on experiences in developing digital content projects.

A2509 Digital Marketing (2/0): This course explores creative strategies and applications of marketing in the digital environment.

A2512 Digital Image Creation (0/2): This course provides students with general principles, specific techniques, and hands-on practice of computer-aided photographic image editing.

A2513 Digital Video Production (0/2): This course provides students with general principles, specific techniques, and hands-on practice of computer-aided video production and editing.

A2514 Creative Strategies and Proposal Writing for Marketing (0/2): This course explores various ways of developing creative campaign strategies for marketing in general and digital marketing in particular.

A2570 Introduction to Information and Communication Technologies (2/0): This course introduces development, applications and consequences of major information and communication technologies.

A2598 Introduction to Creative Industries (2/0): This course focuses on the developments, practices and challenges of cultural and creative industries.

A2599 Storytelling and Storyboarding (0/2): This course explores the techniques and applications of storytelling, and storyboarding across various media.

A2600 Interactive Marketing (0/2): This course explores applications and strategies of interactive marketing.

A2601 Web Service System Practices (0/2): 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.

A2602 Media Database Marketing (2/0): This course introduces technical fundamentals and applications of web-based media database systems.

A2603 Portfolio Design (2/0): This course focuses on writing personal resumes, classifying artwork, design and production, and presenting personal portfolios by using digital media for job searching or for graduate programs.

A2671 Introduction to Visual Communication I (2/0): This course introduces basic elements of visual images and explores techniques of reading and analyzing visual images.

A2672 Introduction to Visual Communication II (0/2): This course introduces basic elements of visual images and explores techniques of reading and analyzing visual images.

A2673 Communication Research Methods I (2/0): This course familiarizes students with approaches to social research in communication as well as procedures and techniques of data collection and
A2674 Communication Research Methods II (0/2): This course familiarizes students with approaches to social research in communication as well as procedures and techniques of data collection and analysis.

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 (1/0): This course provides opportunities for students to develop team projects on topics relevant to creative new media.

A2680 Practicum of Creative Digital Media IV (0/1): This course provides opportunities for students to develop team projects on topics relevant to creative multimedia.

A3420 Aesthetic Strategies and Design (2/0): This course explores the fundamental concepts of aesthetics and their applications to creative design.

A3440 Web Animation (2/0): This course introduces the general principles, specific techniques and provides hands-on practice of web computer animation design and production.

A3443 3D Animation (0/2): 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 (0/2): This course explores various creative ways of designing digital contents.

A3482 Information and Communication Industry Analysis (2/0): This course explores analytical approaches and hands-on methods for the information and communication industry.

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.

A3518 English Readings in Information and Communication II (0/1): This course introduces reports and papers on the current development of information and communication written in English and published in the trade journals or on the Internet.

A3568 Advanced 3D Animation (2/0): This course focuses on advanced principles, techniques, and hands-on practice of 3D computer animation design and production.

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

E0594 Programming Design (2/0): This course introduces fundamental topics in computer programming, including HTML and VBScript programming.

E0718 Computer Graphics (0/2): This course introduces general principles, techniques and hands-on practice of computer-aided drawing and painting.

F0139 Introduction to Psychology (2/0): This course offers an overview of general principles and
mechanisms of human psychology.

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

**M1184 Introduction to Information Network (2/0):** This course introduces the latest information and telecommunication systems and relevant technical specifications such as WiMax, WCDMA, HSDPA, HSUPA and UMB.

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

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

**A2789 Integration of Interactive Systems (0/2):** This course introduces the development tools of interactive systems.

**A2850 Creative-oriented Business Plan (0/2):** The main propose of this course is to develop initial proposals for the creative-oriented business.

**A2851 Narrative on Vernacular Culture Project (2/0):** This course is the 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.

**Master’s Program**

**A1718 Message Design (0/3):** This course explores creative strategies for designing messages in new media.

**A2365 New Media Theories (3/0):** This course explores major concepts and theoretical constructs concerning information and communication or new media.

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

**A2511 Topical Seminar in Information and Communication Industries (3/0):** This course discusses major issues concerning information and communication industries.

**A2556 Topical Seminar in Information and Communication Management (3/0):** This course discusses major issues concerning information and communication management.

**A2605 Media Ecology (3/0):** This course explores how communication media affect our values and lives as well as how interaction with media facilitates technical and social changes.

**M0853 Electronic Commerce (0/3):** This course examines issues concerning the applications and practices of electronic commerce.

**M1283 Qualitative Research Methodology (0/3):** This course familiarizes students with approaches to social research in information and communication as well as procedures and techniques of data collection and analysis.

**A2844 Quantitative Research Methodology (0/3):** This course familiarizes students with approaches to social research in information and communication as well as procedures and techniques of data collection and analysis.

**A2485 New Media Arts (3/0):** This course introduces creative processes of various modern digital
media art forms.

**A2848 Seminar in Marketing Aesthetics (0/3):** This course aims to guide students how to use the visual design combined with usability and marketing through case studies and practice projects.

**A2846 User Experience Design (3/0):** This course teaches the UX design process and research methods.

**A2847 INTERACTIVE DESIGN PROJECT (0/3):** This course teaches how to propose an interactive project based by the principles and methods.

**A2849 Creative-oriented Business Plan (3/0):** The main propose of this course is to develop initial proposals for the creative-oriented business.
CENTER FOR CHINA STUDIES

Director: Chen, Shih-hua (陳仕華)

The Center for China Studies was founded in August 1998 from a combination of academic institutes for Sinology studies. Its main task is not only to develop Sinology studies at our school but also to promote academic activities among Tamkang and other international universities or centers of Sinology.

This center comprises 7 research offices. They are: Popular Novels (通俗文學研究室), Chinese Women’s Literature (中國女性文學研究室), Confucianism Studies (儒學研究室), Chinese Philology Studies (文獻學研究室), Image Caricature Research Studio (圖像漫畫研究室), History of Taiwan (台灣史研究室), Field Investigation (田野調查研究室). These research offices are organized by professors from the Departments of Chinese Literature, and History.

This center has hosted local and international academic conferences and invited scholars from overseas to preside at seminars on Chinese literature. Recently, three academic associations were established. They are: Chinese Han Linguistics and Cultural Studies (漢語文化學學會), Chinese Bibliography and Chinese Literary History (古籍文獻學學會) and Encircle China Sea (環中國海研究學會) to further strengthen local Sinology studies.
COLLEGE OF SCIENCE

Dean: Wang, Bo-cheng (王伯昌)

Brief History

Established in 1958, the College of Science consists of three departments: Mathematics, Physics, and Chemistry. It is one of the oldest colleges in Tamkang and one of the first-established colleges among private universities in Taiwan. The departments of Chemistry and Mathematics were set up in 1958; while the Department of Physics was inaugurated in 1963. The Undergraduate Program of Science, established in 2008, is a year-long course for first year science students designed to provide a flexible and interdisciplinary learning environment. It gives students the chance to discover their academic strengths and interests at the beginning of their degrees. By the end of the freshman year, each student may choose his/her academic major from one of the college’s three departments. 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 2014, the college has 70 full-time faculty members, including 34 professors, 25 associate professors, and 11 assistant professors. Over 99% of the 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 Chemistry is made up of two sections: the Chemistry and Biochemistry Section and the Material Chemistry Section. The Department of Physics has conducted a Photo-electronics Curricular Program for pure and applied physics since 2002. The Department of Mathematics has established a Data Science and Mathematical Statistics Section. These programs have been followed up with a continuous process of monitoring.

In order to promote material and bio-technology research at Tamkang University, two additional research centers were set up: the Nanotechnology Center and the Life Science Development Center, both of which were established in 2003. These centers have been offered special grants by TKU that enable the centers to manage their core research facilities and meet their research-based objectives.

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 us.
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: Wen, Chi-Chung (溫啟仲)

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 with opportunities 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, 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.

The graduate program, which provides teachers with instruction in mathematics, was added to the department in 2009.

Faculty

Chair Professor: Guo, Jong-Shenq (郭忠勝)

Professors
Chan Chang, Wei-ching (張慧京) ; Chang, Yue-cune (張玉坤) ; Chen, Kung-yu (陳功宇) ;
Chen, Shun-yi (陳順益) ; Cheng, Wei-hou (鄭惟厚) ; Chyan, Chuan-jen (錢傳仁) ;
Kau, Chin-mei (高金美) ; Lin, Chien-tai (林千代) ; Shieh, Chung-tsun (謝忠村) ;
Tam, Bit-shun (譚必信) ; Tseng, Shio-jenn (曾琇瑱) ; Wen, Chi-chung (溫啟仲)

Associate Professors
Huang, Yih-huei (黃逸輝) ; Lee, Wu-yen (李武炎) ; Wang, Kui-jang (王國徵) ;
Wu, Hsia-fen (吳秀芬) ; Wu, Jyh-shyang (伍志祥) ; Wu, Meng-nien (吳孟年) ;
Yu, Cherng-yih (余成義) ; Wu, Han-ming (吳漢銘) ; Yang, Ting-hui (楊定輝) ;
Pan, Zhi-shi (潘志實)

Assistant Professors
Tsai, Chih-Chun (蔡志群) ; Wang, Chian-jen (王千真)

Degree Requirements

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

1. Requirements for a degree of B.Sc. in Mathematics:
Completion of 134 credits of courses, including 78 credits of required courses and 35 credits of elective mathematics courses.

2. Requirements for a degree of B.Sc. in Statistics:
Completion of 134 credits of courses, including 77 credits of required courses and 36 credits of elective statistics courses.

3. Requirements for a Master's degree in Mathematics and Statistics:
Completion of 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.
4. Requirements for a Master’s degree in Teaching Mathematics:
Completion of 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.

5. Requirements for a Ph.D. degree in Science:
Completion of 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, 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.

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.

S0027 Analysis II (3/3): Further studies on various topics in real analysis.

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.

S0132 Topology (3/3): Essentials in point set topology, including the concept of topological spaces, connectedness, compactness, countability axioms, separation axioms.

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 $\mathbb{R}^n$, continuous functions, differentiable functions of one variable, Riemann-Stieltjes integrals, sequences and series of functions, differentiation on $\mathbb{R}^n$, inverse and implicit function theorems, integration on $\mathbb{R}^n$.

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.


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 (3/0): The use of computer and software packages to solve problems in mathematics.


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

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

S0616 Linear Algebra II (3/3): Further studies of various topics in linear algebra.

Data Science and Mathematical Statistics Section


M0153 Operation Research (3/3): Linear programming, the simplex algorithm, sensitivity analysis, transportation, assignment, transhipment 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 (3/3): Reliability concepts, and statistical analysis of censored data, degradation data and accelerated life tests.

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


S0266 Introduction to Statistics (2/2): 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.


S0408 Experimental Design (3/3): One-way and two-way classification, Latin squares, factorial...
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.

S0402 Graph Theory (3/3): Planar graphs, graphs coloring domination, independence, chromatic numbers and networks.


S0573 Special Topics in Analysis (2/2): Selected special topics in mathematical analysis.

S0602 Special Topics in Algebra (3/3): Various topics in algebra, such as homological algebra, representations of finite groups and characters.

S0631 Fractal Geometry (3/3): Hausdorff measure and dimension, alternative definitions of dimension, and techniques for calculating dimensions.

S0632 Hyperspace Theory (3/3): Various topologies on spaces whose elements are certain subsets of a given underlying space are studied.

S0686 Commutative Algebra (3/3): Various topics in commutative rings, including Noetherian, Artinian rings and modules, localization, primary decomposition, Hilbert Nullstellensatz, integral extensions and valuations, and analysis of Dedekind domains.

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 sample, 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.
Teaching Mathematics

**S0845 Analysis (3/0):** The real numbers, measure spaces, the Lebesgue integral, Normed spaces and $L^p$-spaces, Hilbert spaces.

**S0846 Geometry (3/0):** Calculus on Euclidean Space, Frame Fields, Euclidean Geometry, Calculus on a Surface, Curvature, Riemannian Geometry.

**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.

**S0850 Study on Algebra for Middle School Mathematics (0/3):** This course covers various topics related to middle school level mathematics in number theory, linear algebra, and abstract algebra. The curriculum includes congruence, Chinese remainder theorem, polynomial, vector space, and matrix algebra. Some teaching designs and skills in the area of algebra will also be addressed.

**Ph.D. Program**

**E1197 Dynamic Systems (3/3):** Diffeomorphisms and flows, stable manifold, center manifold, normal form, versal deformation.


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

**S0590 Nonlinear Functional Analysis (3/3):** Basic problems of the theory of non-expansive mappings in Banach spaces, fixed point theorems and convergence of successive approximations.

**S0591 Linear Integral Equations (3/3):** Basic existence theorem, integral equations with $L^2$ kernels, applications to partial differential equations, Fourier transforms, the Fredholm theory.

**S0593 Smooth Dynamic Systems (3/3):** Diffeomorphisms, flows, invariant manifold, transversality, generic properties, structural stability.

**S0594 Nonparametric Regression (3/3):** Theorems, methods, and applications of kernel regression procedure.
DEPARTMENT OF PHYSICS

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

Chairman: Du, Chao-hung (杜昭宏)

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
Chang, Henry C. L. (張經霖); Chen, Chun-nan (陳俊男); Chien, Fan-z (錢凡之);
Cho, Hing-tong (曹慶堂); Du, Chao-hung (杜昭宏); Ho, Choon-lin (何俊麟);
Lin, Jenn-an (林震安); Lin, I-nan (林諭男); Pong, Way-faung (彭維鋒);
Tseng, Wen-je (曾文哲); Zhou, Zicong (周子聰)

Associate Professors
Chen, Jiing-yann (陳憬燕); Hsueh, Hung-chung (薛宏中); Jen, Jen-yi (鄭振益);
Lee, Ming-hsien (李明憲); Ling, Dah-chin (林大欽);
Liu, Guo-chin (劉國欽); Shiau, Shioo-meei (蕭秀美); Tang, Chen-yau (唐津華);
Wang, Shang Yung (王尚勇); Yeh Ping-hung (葉炳宏)

Assistant Professors
Chin, Yi-nan (秦一男); Yang, Shu-chun (楊淑君); Chuang, Cheng-hao (莊程豪)

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:
   Completion of 135 credits of courses, including 93 credits of required courses and 21 credits of elective physics courses.

2. Requirements for B.Sc. in Applied Physics:
   Completion of 135 credits of courses, including 94 credits of required courses and 20 credits of elective physics courses.

3. Requirements for a Master's degree in Science:
   Completion of 26 course credits, including 13 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 6 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): 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 (3/3): 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.


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 (0/3): Introduction, reviews and concepts of functions, differentiations, vector algebra, vector differentiations, vector integrals, orthogonal curvilinear coordinates, differential equations.


S0082 Optical Electronics (3/0): The semiconductor laser, the light emit diode, detector and optical fibres.


S0125 Solid State Physics(3/0)/ 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.

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 (0/3): 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 (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, 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.

S0372 Microwave Physics (0/3): This course aims to demonstrate the application of electromagnetic waves in microwave communication systems. Based on the theory of electromagnetic wave, we will discuss transmission line theory and transmission line structure, followed by the design theory on the impedance matching, microwave resonator, power divider and directional coupler, and microwave fillers. In the last part of the course, microwave systems combining all the above-mentioned microwave passive devices will be briefly introduced.

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.

S0375 Digital Electronics Laboratory (1/1): Introduction of instruments, experiments on basic logic gates, experiments on combined logic systems, LED digital display-devices and their applications, flip-flop IC circuits, up-counter and down-counter and its applications, experiments on circuits of coder and decoder, shift-register and its applications, comparators and its applications, arithmetic logic circuits, multiplex electronic system (Multiplexer), de-multiplex electronic system (De-multiplexer),
introduction to the course and instruments, I/O (input / output) interface lay on and test, programming with C-language for I/O interface, experiment on a sequential (series) logic system, experiment on a simulated electronic dice, A simulation of controlled traffic signals (communications), keyboard scanning and display systems, two-colors dot LED matrix.

**S0397 Applied Electric Circuits (3/0):** Introduction of applied electric circuits/circuit theory, analysis of resistive circuits, loop and nodal techniques for circuit analysis, introduction to operational amplifiers, additional techniques for circuit analysis, energy storage elements: the capacitor and the inductor, analysis of first and second-order transient circuits, AC circuit analysis techniques, power calculations in AC circuits.

**S0398 Applied Electromagnetism (3/3):** Vector analysis, electrostatics, special techniques for calculating potentials, electrostatic field in matter, magnetostatic field in matter, magnetostatics, electrodynamics, electromagnetic Waves.

**S0399 Computational Materials Physics (3/0):** 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).

**S0401 Plasma Physics (3/0):** This course consists of three major parts: (i) plasma physics, (ii) plasma chemistry, and (iii) diagnostics. Plasma physics covers the following topics: Plasma science, gas discharge, and plasma source. Plasma chemistry involves plasma processing, kinetics and collisions, atomic and molecular collision and spectra, and plasma surface kinetics. The third part includes the physics and chemistry of diagnostics.

**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.

**S0471 Applied Electronics (3/3):** Semiconductors, diodes, bipolar junction transistors, field-effect transistors, transistor amplifiers, frequency response, operational amplifiers, differential and multistage amplifiers, integrated circuits.

**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 on Frontier Physics (3/0):** Physics and philosophy, experimental physics and astronomy, theoretical physics and thermodynamics, relativity and gravity, Condensed-matter physics, high-energy physics.

**S0553 Optics Laboratory (1/0):** 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, fine structure, WKB approximation, variational
principle, Aharonov-Bohm effect, quantum transition.

**S0596 Particle Physics (3/0):** This course provides a qualitative introduction to modern elementary particle physics for seniors. Topics include: elementary particles and their interactions, relativistic kinematics, symmetries and conservation laws, the quark model, neutrinos and the weak interaction, CP-violation, and the standard model and beyond.

**S0599 Physics of Materials (0/3):** Structure, lattice, crystal structure, reciprocal space, bonding, X-ray diffraction, and lattice distortion.

**S0640 Review on Photonics (3/0):** Fundamentals of optical and semiconductors, including photoelectronic semiconductors, display devices, fiber optics and its components, integrated optics, optoelectronic integrated circuits, optical storage devices, charge coupled devices and their application, photonic crystal, micro-optical devices, near field optics, nonlinear optics, electro-optics in medicine.

**S0654 Photonic Crystal (3/0):** Fundamentals of photonic crystals, wave propagation in non-uniform dielectric media, wave propagation in periodic dielectric media, numerical method for photonic crystals, propagation and abnormal refractive in photonic crystals, design and fabrication of photonic crystals, application of photonic crystals.

**S0684 Applied Optics (0/3):** Fourier optics, nonlinear optics, laser optics, fiber optics, polarization, theory of multilayer films, optical properties of materials.

**S0703 Computational Physics (0/3):** 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.

**S0734 Optical Processes in Semiconductor (3/0):** Theory of semiconductors, absorption, direct transition, indirect transition, emission, radiation recombination, irrigation recombination, donor, acceptor, exciton, phonon, photon, and polaritition.

**S0744 The Special and General Theory of Relativity (3/0):** The principle of relativity, 4-vector and tensor; the Chritoffel 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.


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)

Master’s Program

S0064 Classical Mechanics (3/0): 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.

S0073 Biophysics (0/3): Chemical binding and structure of biomolecules, energies, forces and bonds, rates of reaction, entropy, temperature and free energy, entropic forces, conformational and mechanical properties of biopolymers, biological membranes, molecular motors, genes and the genome.

S0126 Solid State Physics (I) (0/3): Crystal structure: X-ray diffraction, phonons, free electrons, energy band, Fermi surface, and semiconductors.

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 (3/0): This lecture gives a description of the x-rays produced by the synchrotron radiation source and its applications in modern material research.
S0693 Superconductor Physics (3/0): Historical overview, introduction to electrodynamics of superconductors, the BCS theory, Ginzburg-Landau theory, magnetic properties of classic type II superconductors, Josephson effect, spectroscopic properties, high temperature superconductors and related topics.

S0728 X-Ray Physics (3/0): The properties of x-rays, and the interaction of x-rays with matter, including the absorption spectra, emission spectra, and scattering.

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.

S0786 Solid State Materials (3/0): This course introduces the basic principle of ceramic materials. We start with the structure of ceramics (especially the perovskite and spinel structures) and their mechanism for producing ferroelectric and magnetic properties of the materials; then we discuss the defect in ceramics and the mechanism for producing the semiconductivity of the materials. Also included in the course are mass and electrical transport of ceramics and the related mechanism for producing electrochemical properties, phase equilibria and the kinitics, and microstructure and its effect on physical properties.

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.

S0802 Electroceramics (0/3): This course introduces the physical properties and application potential of ceramic materials; we start with the structure of materials and the mechanism that produces the dielectric, semiconducting, ferroelectric, pyroelectric, piezoelectric and magnetic properties, followed by the introduction of typical dielectric, semiconducting, ferroelectric, pyroelectric, piezoelectric and magnetic material systems and possible device applications.

S0811 Transmission Electron Microscopy: Principle and Application (0/3): This course introduces the principle of electron microscopy and its application for materials analysis. We start with an introduction to the structure and operation principle of TEM before discussing the principle of electron diffraction and its application for analyzing the materials structure, including Ewald sphere and rel-rod of diffraction spots. Other topics explored include kinetic and dynamic theory for image formation in TEM, including the analysis of defects in materials, phase contrast principle, and the principle for chemical analysis in TEM, including X-ray spectroscopy and electron energy-loss spectroscopy.

T0102 Seminar (2/2)

T8000 MS Thesis (4)

Ph.D. Program

E2844 Special Topics in Solid State Physics (3/0): Spin waves in magnetic insulators, superfluidity in weakly interacting Bose gas, Laudau’s theory of Fermi liquids, Bardeen-Cooper-Schrieffer theory of superconductivity, the Mott metal-insulator transition and the Hubbard model, the t-J model in two dimensions and cuprate superconductor, the Kondo effects, disordered conductors and Anderson localization, the integer and fractional quantum hall effects.

S0268 Statistical Mechanics (II) (3/0): Basics of equilibrium statistical mechanics, the Ising model and phase transitions, critical phenomena, the renormalization group approach.

S0526 Mathematical Physics (II) (0/3): Partial differential equations, Eigenfunctions and Green's function, perturbation theory, integral equations, calculus of variables, numerical methods.

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**S0569 Electrodynamics (II) (0/3):** Scattering, and diffraction, magnetohydrodynamics and plasma physics, special theory of relativity, dynamics of relativistic particles and electromagnetic fields, collisions between charged particles, energy loss, and scattering, radiation by moving charges, Bremsstrahlung, method of virtual quanta, radiative beta processes, multipole fields, radiation damping, self-fields of a particle, scattering and absorption of radiation by a bound system.

**T0096 Seminar (II) (2/2)**

**T8000 Thesis (6)**
DEPARTMENT OF CHEMISTRY

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

Chairman: Lin, Jyh-shing (林志興)

The Department

The Department of Chemistry was established in 1958, and began to offer separate degrees in pure chemistry and applied chemistry in 1973. In 2003, the Department officially set up two divisions: Biochemistry and Material Chemistry. The Department is located in, and is the sole occupant of, the Chung-Ling Chemistry Hall, which was built in 1999 and contains a library, laboratories, classrooms, and a precision instrument center. With these facilities, students have the opportunity to gain hands-on experience using modern equipment. Moreover, the low student to faculty ratio allows for closer student-teacher interaction, better student guidance, and increased research opportunities.

The MS and Ph.D. programs in chemistry were established in 1971 and 1975 respectively. The 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, faculty members engage in 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 at both local and overseas universities, as well as in private industry and government laboratories across the nation and worldwide.

Faculty

Professor Emeritus
Lin, Yun-shan (林雲山) ; Wei, Ho-hsiang (魏和祥) ; Wu, Chia-li (吳嘉麗)

Professors
Kao, Huey-chuen (高惠春) ; Lee, Shih-yuan (李世元) ; Lin, Jyh-shing (林志興) ; Lin, Meng-shan (林孟山) ; Wang, Bo-cheng (王伯昌) ; Wang, Wen-jwu (王文竹) ; Hsu, Hsiu-fu (徐秀福) ; Wang, San-lang (王三郎) ; Chen, Yau-hung (陳曜鴻) ; Shih, Tzeng-lien (施增廉)

Associate Professors
Chuang, Tzu-chao (莊子超) ; Chern, Ming-kai (陳銘凱) ; Hsieh, Jen-Chieh (謝仁傑) ; Lee, Chang-shin (李長欣) ; Wu, Chun-hung (吳俊弘)

Assistant Professors
Deng, Jin-pei (鄧金培) ; Pan, Po-Shen (潘伯申) ; Chen, Chih-hsin (陳志欣) ; Wei, Yi (魏屹) ; Hsieh, Chung-Hung (謝忠宏) ; Chen, Chiao-chen (陳巧貞)

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:
   Completion of 134 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:
   Completion of 134 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:
Completion of 28 credits of courses, including 16 credits of required courses and 4 credits 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:
Completion of 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 polyacrylamia 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 nitritation 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.

S0115 Organic Spectroscopy (0/3): Identification of organic compounds by spectral analysis, including proton and C-13 NMR, mass spectra, UV spectra, IR spectra.


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, peptide formation, peptide synthesis, peptide formation, peptide formation.

**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):** Schrodinger 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-component 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, the 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, carbanions, 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.

S0506/S0724 Advanced Biochemistry I/II (3/3): Latest developments in biochemistry and their
S0456 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 Seminars 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)
COLLEGE OF ENGINEERING

Dean: Ho, Chii-dong (何啟東)

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. 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.

Established more than four decades ago, the TKU’s College of Engineering has evolved into a prestigious school made up of eight departments and ten graduate institutes. These eight departments are: Architecture, Civil Engineering, Water Resources and Environmental Engineering, Mechanical and Electro-Mechanical Engineering, Chemical and Materials Engineering, Electrical Engineering, Computer Science and Information Engineering, and Aerospace Engineering Department. All the College’s 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. According to the 1996-2006 Essential Science Indicators (ESI), conducted by the Institute for Scientific Information (ISI), the TKU’s College of Engineering was listed in the ESI under the ranking category of Engineering Subjects, which means to be regarded as among the world top 1% in the field. 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, professionally maintained by specialized technical staff, and operated with outstanding performance. Meanwhile, the College of Engineering’s major task is to promote curricula entirely taught in English, program quality improvement, five-year focused development plan, international scholars’ lectures and academic collaboration across the Taiwan Strait, and to continuously pursue excellence in engineering education and lead the world in innovative research.

Motto and Goals
Quality Teaching and Leading-edge Research.

Future Development
1. Recruiting international scholars to provide short-term courses and English instruction at the graduate levels.
2. Recruiting distinguished professors to motivate research studies and to take research efforts to a higher level.
3. Putting each department’s five-year recruiting plan into action and increasing the quality and the number of full-time faculty members.
4. Promoting the five-year project and emphasizing R&D in the fields of robot and wind engineering.
5. Encouraging cooperation with the industrial sector and formulating incentives for cooperative projects.
6. Sharing equally of funds to improve lab facilities and research equipment on a three-year basis.
7. Inviting eminent local and overseas scholars to offer intensive courses or cooperative research projects and encouraging outstanding faculty members to deliver lectures or conduct research at prestigious organizations or universities.
8. Promoting 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.

**E0424 Advanced Engineering Mathematics (2/0):** This course prepares students for the three classes of linear second-order partial differential equations—elliptic, parabolic, hyperbolic—and the three types of boundary conditions: Dirichlet, Neumann, and Robin. Additionally, it provides a comprehensive discussion on the separation of variables technique, relevant theorems of Fourier series and an introduction to the Sturm-Liouville boundary value problem.

**E0959 Advanced Fluid Mechanics (2/0):** 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 boundary layer equations, boundary layer separation, boundary layer control.

**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.

**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 nanoscaled 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.

E2728 The Future Integration of Information and Communication Technology (0/2): This course introduces basic IT concepts like the nature of communication and applications of information and communication. Some case studies will be conducted on CMMI, software development procedure, peer to peer technology, call center application, wireless and digital live, and VoIP.

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.

E2952 Introduction to Preventions for Slope Disasters and Debris Flow (0/2): This course provides a comprehensive introduction to the prevention of slope disasters and debris flow. The fundamental mechanism of slope disasters and debris flow is introduced first, and then various countermeasures used to minimize damage are illustrated by drawing on real examples.

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.

E3231 Introduction to Green Energy and Patents (2/0): This course provides an introduction to Green Technology, including solar power, wind power, and smart grid, as well as discussing other related technologies and global market development cases. It then expands its focus to include the process of applying for patents, including patent searching, patent mapping, patent valuation and patent writing. The course teaches students about the variety of patents available for green energies and green electronics technology.

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.

**E3205 Dynamic Web Programming (0/3):** This course focuses on Java based web development, server side Java Server Page (JSP) and Servlet technologies, with a brief overview of client side JavaScript. AJAX (Async. JavaScript and XML) based Rich Internet Application will be covered to explore the skills used in a Client/Server application design. Furthermore, the MVC (Model View Controller) design pattern, supporting multi-tiered web applications, will be illustrated using a sample database-backed web application. JDBC (Java DataBase Connectivity) will also be briefly covered in this MVC sample application. The entire course will be conducted in classrooms equipped with computers and will involve various hands-on exercises.

**E3206 Trends of Information and Communication in the 21st Century (0/3):** This course explores the current status and integration of information technology and communication in industry, as well as innovations in trends related to information technology and communication.

**E3224 Introduction to Green Energy Technology (0/3):** This course aims to enhance the student's understanding of fossil and nuclear energy and the related impact on the environmental changes, discusses and analyzes the issues about green energy and environment conservation. Finally this course increases thinking capacity and scientific researching interest for students including knowledge of the establishment.

**M0286 Project Management (0/2):** In these knowledge economy times, the management methods of functional organization couldn’t manage the multiple 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’ system thinking. If students could learn basic project management knowledge during study and put it into practice, it is certain that their ability will be promoted when applying for future jobs.
DEPARTMENT OF ARCHITECTURE

Degrees Offered: B.Arch., M.Arch.

Chairman: Huang, Jui-mao (黃瑞茂)

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
Wang, Chi-kung (王紀鯤)

Visiting Professors
Hideki, Hirahara (平原英樹); Ulf, Meyer (麥爾); Stephen, Roe (絡思文)

Professor
Yau, Jong-dar (姚忠達)

Associate Professors
Chen, Chen-cheng (陳珍誠); Jeng, Hoang-ell (鄧晃二); Liu, Chi-wen (劉緯文);
Luh, Jin-shyong (陸金雄); Mi, Fu-kuo (米復國); Huang, Jui-mao (黃瑞茂);
Lai, Ih-cheng (賴怡成)

Assistant Professors
Wang, Wen-an (王文安); Bee, Kuang-chein (畢光建); Sung, Li-wen (宋立文);
Chi, Jr-gang (漆志剛); Liu, Hsin-jung (劉欣營); Ling, Tzen-Ying (林珍瑩);
Yu, Ying-Chang (游瑛樟); Ko, Chun-Jung (柯純融)

Lecturers
Li, An-rwei (李安瑞)

Degree Requirements

1. Requirements for a degree of B.S. in Architecture:
   Completion of 163 credits of courses, including 113 credits of required courses and 32 credits of elective architecture courses.

2. Requirements for a Master’s degree in Architecture:
   Completion of 31 credits of courses, including 27 credits of required courses and 4 credits of seminars.

Course Descriptions

Undergraduate Courses

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.

A0868 Introduction to Fine Arts (0/2): This course focuses on the history of art. From social class,
gender and environmental perspectives; we then move on to explore visual languages and notions of art.

**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.

**E0364 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.

**E0365 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.

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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 principal 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**

**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 material: 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 Area (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.

E1801 Applied Fluid Mechanics (0/2): This course is intended as an introductory course in fluid mechanics for students in different departments of the college. The subject of fluid mechanics is the study of the behavior of fluids at rest and in motion with the basic physical laws of motion. The course includes fluid statics, fluid kinematics and fluid dynamics.

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.

E2430 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 (4): Post-graduate students are required to complete a thesis as part of the fulfillment 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: Wang, Jen-mu (王人牧)

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
Chang, Cheng-hisn (張正興); Chang, Der-wen (張德文); Cheng, Chii-ming (鄭啓明); Chu, Shi-chih (祝錫智); Hong, Yung-shan (洪勇善); Hsu, Ting-chi (徐錠基); Lee, Ying-haur (祝銘富); Lin, Yuh-yi (林佑逸); Wu, Cho-sen (吳朝賢); Yang, Zon-yee (楊長義); Yeh, I-Cheng (葉怡成)

Associate Professors
Kao, Chin-sheng (高金盛); Liu, Ming-jen (劉明仁); Wang, Jen-mu (王人牧)

Assistant Professors
Fan, Su-Ling (范素玲); Lo, Yuan-Lung (羅元隆); Tsai, Ming-Hsiu (蔡明修); Tuan, Yung-ting (段永定)

Degree Requirements

The Department of Civil Engineering consists of two sections: the Division of Infrastructure and the Division of Building Business.

1. Requirements for a B.Sc. in the Division of Infrastructure:
   Completion of 146 credits of courses, including 102 credits of required courses and 29 credits of elective civil engineering courses.

2. Requirements for a B.Sc. in the Division of Building Business:
   Completion of 146 credits of courses, including 101 credits of required courses and 29 credits of elective civil engineering courses.

3. Requirements for a Master’s Degree in Civil Engineering:
   Completion of 30 credits of courses, including 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.

4. Requirements for a Ph.D. in Civil Engineering:
   A. Program A: Completion of 30 credits of courses, including 6 credits of thesis courses.
   B. Program B: Completion of 24 credits of courses, including 6 credits of required courses and 6 credits of thesis 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.
member and pass an oral examination.

**Course Descriptions**

**Undergraduate Courses**

**B0302 Economics (3/0):** This course covers the art and science of economic analysis, tools of economic analysis, the market system, economic decision makers, elasticity of demand and supply, labor markets and unions, etc.

**E0006 Introduction to Civil Eng. (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 learning.

**E0011 Soil Mechanics (3/3):** 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 (3/0):** 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.

**E0030 Engineering Drawing (1/0):** The purpose of this course is to teach students how to make and read drawings.

**E0031 Graphics (0/1):** Students are introduced to the three major parts of graphic science: descriptive geometry (including perspectives and shadows), engineering, measuring, drawing and graphical solutions.

**E0034 Engineering Mathematics (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.

**E0102 Hydrology (2/0):** This course conducts a study of the science of water such as its generation, cycle, distribution, chemical/physical characteristics and interrelations with the environment and biology. The emphasis is on water volume research, control and engineering hydrology facility design and application.

**E0180 Mechanics of Materials (0/3):** 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.

**E0431 Advanced Strength of Materials (0/3):** Course content includes beam on elastic foundation, shear center of thin-wall member, bending of curved beam, general concept of stress and strain, the energy principle, torsion problem and membrane analogy, torsion in hollow thin-wall members, etc.
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. (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 (3/0): 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 Analysis (3/3): 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.

E0618 Structural Theory (II): 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.

E0671 Engineering Application of the Computer (2/2): In this course, students learn structured programming necessary for the promotion of fully computerized operations. Topics include methods and techniques required to solve problems with computers and FORTRAN programming.

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 (3/3): 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.

E0879 Introduction to Environmental Engineering (3/0): Topics in this course include water pollution and control, solid waste disposal, air pollution control, public nuisance in construction, noise pollution and control, and environmental impact assessment.

E0918 Introduction to Construction Automation (0/2): Topics in this course include planning and design automation, construction technique automation, construction equipment automation, construction material automation, construction management automation, smart building and industrialization of house production.

E0927 Sewerage Engineering (0/3): The material in this course is arranged in the logical sequence of collection, treatment and disposal. Major topics such as sewage quantity estimation, sewerage system design and construction, primary treatment, and secondary treatment are also covered.

E0960 Surveying (2/2): This course aims to provide students with basic concepts on surveying and introduce them to practical surveying techniques generally required in engineering.

E0962 CAD/CAM (3/0): This course is lab exercise and programming oriented. Its objective is to cover a wide range of topics (e.g., computer graphics, modeling and visualization, analysis and design packages) to produce knowledgeable CAD (Computer-Aided Design) users who can quickly learn
specific programs and/or software within a specific computing environment.

**E0967 Design of Reinforced Concrete Structures (0/3):** Topics include the performance of concrete and steel as structural materials; the behavior, elastic and inelastic, of reinforced-concrete members and structures; designing structures safely, economically and efficiently.

**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.

**E0998 Foundation Design (0/2):** This course covers the topics of spread-foundation, retaining structures, anchors, and pile foundations. Selection of the foundation based on soil conditions and structural constraints is the first step of design.

**E1034 Introduction to Computer (2/2):** Course content includes an introduction to computers, number systems and logical algorithms, representation of data, input/output unit, memory unit, central processing unit, flow chart and program language, FORTRAN program and exercises.

**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 (3/0):** 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.

**E1177 Artificial Intelligence in Civil Engineering (0/2):** This course introduces key concepts in artificial intelligence sufficient for creating simple intelligent systems in engineering. Instruction in symbolic programming language (Prolog) and rule-based systems is provided in order to better illustrate AI principles.

**E1245 Construction Methods and Equipment (0/3):** The following major topics are covered in this course: the planning process for equipment and methods, earth work and equipment, concrete work and equipment, form work, reinforcement work, foundation engineering and equipment, bridge engineering and equipment, and pavement engineering and equipment.

**E1245 Construction Methods and Equipments (2/0):** This course is intended to provide a comprehensive introduction to the methods and equipment used in construction. Topics include earthmoving materials and operations, excavating and lifting, loading and hauling, composting and finishing, rock excavation, production of aggregate, concrete and asphalt mixes, concrete construction, foundation engineering, and bridge and tunnel construction.

**E1270 Estimating Construction Cost (3/0):** Cost estimation in construction engineering is very important. Topics covered include quantity calculation, analysis of labor and materials, fee rate analysis of construction equipment, typical synthetic unit price analysis and cost estimation for special construction items.

**E1317 Water Supply Engineering (3/0):** This course covers water supply engineering and water waste engineering. Topics include water supply engineering projects, water quality, water purification, water supply system, drainage system, waste water treatment and water supply equipment.

**E1396 Pavement Design (0/3):** This course covers fundamental theories and design procedures used in pavement design. Numerous topics, including pavement mechanics, traffic loading, pavement performance as well as design procedures, are introduced.
E1398 Railway and Rapid Transit Engineering (0/3): This course covers public transportation and urban development; transit classifications; vehicle characteristics and motion; analysis of travel time; rail transit modes and facilities; mass rapid transit systems in Taiwan; transit system performance; new concepts and technologies.


E1799 Introduction to Urban Planning (3/0): This course begins by introducing the history and theory of urban planning in the western world and then focuses on the mechanism and various tools used by urban planners in Taiwan.

E2122 Project Research (1/0): This subject aims to teach students how to study for a research project. It involves literature reviews, an analysis of research approaches, problem discussion, writing exercises and the presentation of a technical report.

E2427 Engineering Management (2/0): This course introduces the process of coordinating a large scale engineering project, from planning, design construction and operation and maintenance, to completing the project on time and meeting the requirements within the budget.

E2474 Statistical Methods in Engineering Applications (3/0): This course provides students with a foundation in descriptive statistics, probability distributions, parameter estimation, statistical inference and statistical methods for engineering applications. The major topics of this course include: introduction, descriptive statistics, probability distribution, distribution of sampling statistics, parameter estimation, hypothesis testing, analysis of variance, and regression.

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 (3/0): 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 (0/3): 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.

E2956 Quality Control and Experiment Design (0/3): This course covers governmental quality assurance regulations for public works, the application of quality control concepts, statistical experimental design principles in the construction process to minimize project costs and improve quality.

E2958 Construction and Estimation (3/0): This course aims to establish knowledge and skills in the construction versus cost estimation of engineering so that students can apply this concept to their future careers and pass the professional engineer examination.

E2959 Engineering Insurance and Risk Management (3/0): Risk management and insurance is the study of methods used by organizations and individuals to manage activities whose outcomes cannot be forecasted. In organizations, the purpose of risk management is to enable the organization to progress toward its goals and objectives on a direct, efficient, and effective path. As such, risk management is a central management function, devoted to the management of uncertainty and its effect on the organization’s progress toward its mission. Risk management is an element of virtually any area of management specialization. This course focuses on a special category of risks: risks that are
controllable in the sense that managers’ actions can affect the process giving rise to uncertainty. Meanwhile, primary insurance options in the construction industry will also be introduced.

**E2960 Property Management (3/0):** The first objective of this course is to introduce the concept and effectiveness of property management. The second objective is to help students gain practical experience in property management.

**E3081 Introduction to Engineering Mechanics (1/0):** This course is designed to introduce the history of mechanical developments and the major functions of mechanics. Upon completion of this course, students are expected to understand the fundamentals of mechanics. The subjects covered include vector analysis, equilibriums, forces and movements, stresses and strains and other basic topics in solid mechanics and structural mechanics. It is hoped that this course would provide students with an initial taste of this professional field before taking any higher-level mechanics courses.

**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.

**E3270 Sustainable Construction Materials and Characterization (0/3):** This course will provide students with a critical understanding of sustainable construction materials as well as sustainable building materials. It will cover a full range of engineering materials basics, such as Portland cement concrete and asphalt concrete. Issues of recycled materials, agencies’ specifications, and FHWA recommended evaluation and analysis procedure will form a major framework for this course. Students will be able to understand what they need to know and verify the sustainable materials to grasp their specific impacts on ecological, human, economic and engineering environments.

**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.

**M0066 Production & Operations Management (3/0):** Production and Operations Management is about the transformation of production and operational inputs into outputs that, when distributed, meet the needs of customers. It has been a key element in the improvement in productivity in businesses around the world. This course focuses on productivity improvement in construction. Topics include productivity evaluation, factor model of construction productivity, on site performance improvement program, etc.

**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 (3/0):** 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 (0/3):** 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.
M0518 Accounting (3/0): 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, and internal control. Further, students can prepare and understand financial statement reports, and then analyze a company’s financial structure.

M0623 Real Estate Investment and Management (2/0): Students will learn about: economic change and its effect on real estate investment and management; real estate investment opportunities on both sides of the Taiwan Strait; real estate market boom and bust and economic indicator analyses; research investment concepts and operating decisions in the field of real estate; MOUs and ECFA that influence Taiwan’s real estate market; and global real estate pricing.

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 (3/0): This course introduces the concept of basic soil behavior under the influence of various forces.

E2585 Introduction of Wind Engineering (2/0): This course offers an introduction to the applications of Wind Engineering.

E2997 Project Planning and Control (0/3): 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.

Master’s Program

E0000 Engineering Materials and Quality Control (0/3): This course is designed for students to understand properties and behavior of various civil engineering materials, standard specifications and methods of test, long-term protection and durability, inspection, quality control and assurance.


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.

E0017 Numerical Methods in Geotechnical Engineering (0/3): This course offers an introduction to numerical methods and their application in geotechnical engineering. The finite difference, finite element, and boundary element methods are also discussed in this course.

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.

E0422 Advanced Soil Mechanics (0/3): Stress distribution for various kinds of loads in the soil, strength and failure criteria of soil, consolidation characteristics of soft clay, and stability problem in
the soil mechanics.

**E0449 Advanced Structural Mechanics (3/0):** This course employs both the Force Method and the Displacement Method to analyze structures, sub-structures, C.S.T. elements and Material nonlinear problems.

**E0491 Theoretical Soil Mechanics (0/3):** This course offers an introduction of solutions to geotechnical engineering applications that are classified as stability problems. Upper bound and lower bound methods of the limit analysis are emphasized.

**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.

**E0619 Structural Stability (0/3):** This course presents a concise but thorough introduction to the principles and theory of structural stability that are the bases for structural steel design. It demonstrates how these principles can be used to solve practical building frame design problems.

**E0682 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.

**E1159 Pavement Materials (0/3):** This course discusses designs and properties of modern pavement materials, including soils, aggregates, Portland cement concrete and asphalt concrete.

**E1332 Expert Systems in Civil Engineering (0/3):** Topics include: fundamentals of artificial intelligence; introduction to symbolic language and expert system shells; knowledge representation and reasoning paradigms; and object-oriented programming.

**E1337 Pavement Analysis and Design (3/0):** This course is intended to address advanced theories of pavement behavior and concepts of pavement design.

**E1338 Pavement Evaluation and Rehabilitation (0/3):** This course focuses on the concepts and techniques of pavement evaluation, and proper design of pavement maintenance and rehabilitation projects.

**E1344 Special Topics and Programming in Knowledge-Based Systems (3/0):** This course emphasizes knowledge-based programming methodologies, knowledge engineering techniques, the life cycle of expert systems, and alternative reasoning paradigms. Each student will develop a prototype expert system for an application of his or her choice.

**E1350 Wind Engineering (3/0):** This course reviews random vibration and spectral analysis; characteristics of atmospheric boundary layer flow; bluff body aerodynamics; aero elastic phenomena—structure and flow interaction; along wind and across wind responses of high-rise buildings and slender structures; and wind tunnels.

**E1367 Special Topics in Transportation Engineering (0/3):** This course covers the consideration, analysis, and evaluation of recent transportation-related innovations and developments.

**E1390 Earthquake Engineering (0/3):** The contents in this course include: understanding Earthquakes, how earthquakes occur, how to measure an earthquake, how to consider the earthquake-resisting capacity of a building structure, how to achieve earthquake-resisting design of building structures, its theoretical background-structural dynamics, static earthquake-resisting analysis, dynamic earthquake-resisting—spectrum method and time-history analysis, earthquake-resisting design of RC structures and steel structures, passive control of building structures, and application software.
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.

E1642 Random Vibration (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.

E1888 Applied Rock Mechanics (0/3): Student will learn the mechanical behavior, construction method and measurement of tunneling.

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.

E2474 Statistical Methods in Engineering Applications (3/0): This course explores the topics: data characteristics and data collection, descriptive statistics, probability, discrete random variables and probability distributions, continuous random variables and probability distributions, random samples and sample distributions, point estimation, test of hypotheses based on a single sample, inference based on two samples, the analysis of variance, the analysis of categorical data, regression analysis and engineering applications.

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.

E2877 Decision Support Systems (3/0): Course content includes: decision making systems modeling and support, decision support systems modeling and analysis, data warehousing, data, text and web mining, collaboration, knowledge management, intelligent system, implementation of decision support systems, enterprise systems, knowledge acquisition, and representation and reasoning.

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 (3/0): 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.

E2922 Research and Experimental Design (2/0): This course offers an introduction to research methods with emphasis on applying them to the field of civil engineering. Experimental research design, data collection, statistical data analysis, validity, and report writing will be covered.

E2925 Structural Retrofit and Design (3/0): This course introduces the principle of structural retrofit analysis and design of existing buildings and bridges subjected to earthquakes. The major topics include: structural health monitoring, material test, lifespan evaluation, the strength analysis method, and design software.
E3039 Computational Fluid Dynamics—Building Environment Applications (3/0): As an introduction to computational fluid dynamics on how to generate a grid, how to specify boundary conditions, and how to determine if the computer output is meaningful, this course emphasizes the applications of CFD to building environmental problems.

E3040 Engineering Information System Project (3/0): Aiming at the implementation of the engineering information system (EIS), this course guides students to propose EIS projects and then apply system analysis and system design (SASD) techniques and up-to-date information technologies in order to realize their proposals.

E3041 Technologies Creation vs. Construction Engineering (2/0): This course discusses the development status of the scientific technology industry and their future creation. This course also discusses how to raise the scientific standards of construction engineering for the benefit of human beings by using leading edge technology. This course also discusses how to promote scientific technologies by using appropriate construction engineering methods.

E3042 System Analysis and Design of Engineering Softwares (0/3): An introduction to the knowledge body consists of system analysis and design.

E3094 Engineering Material and Quality Control (0/3): This course is designed for students to understand concepts of quality control, current QC systems for the construction of public works, statistics basics, statistical quality control, properties, standard specifications, inspection and methods of test of construction materials.

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 (3/0): 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 (2/0): 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).

E3940 Engineering Information System Project (0/3): Aiming at the implementation of engineering information systems (EIS), this course guides students to propose EIS projects and then apply system analysis and system design (SASD) techniques and up-to-date information technologies in order to realize their research objectives.

E3941 Technologies Creation vs. Construction Engineering (2/0): Topics include the development status of high technology industries and their future prospects, the promotion of technology in construction engineering, and the creation of high technology industries by creating adequate construction engineering methods.

E3942 System Analysis and Design of Engineering Softwares (0/3): Course content includes requirement analysis, system design, interface design, design pattern, data management design, and implementation and software.

E3147 Construction Automation and E-business (0/3): 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.
S0061 Reliability Analysis (3/0): This course will first review the fundamental concept of probability theory, including many common and useful probability distributions. Two major reliability analysis approaches – the sampling method and approximated method – are also discussed and applied to practical engineering problems. Bayesian theory and other recent applications of reliability analysis in civil engineering will also be discussed in this course.

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.

E0754 Theory of Elasticity (3/0): The purpose of this course is to discuss the methods of analysis of stress and deformation for an elastic body under loading.

E3132 Asset Management Systems (2/0): This course covers the following topics: an introduction to asset management systems, an overview of pavement management systems, pavement condition surveys, pavement condition indices, demonstration of the MicroPaver program, relational databases and locational reference systems, data requirements (inventory and history, pavement management levels and functions), performance models, remaining service life, prioritization, optimization, feedback database management, establishing criteria and determining present and future needs, institutional and implementation issues, quality management, looking ahead (LTPP).

E3222 Advanced Foundation Engineering (0/3): This course equips students with high-level knowledge in foundation engineering. Subjects include: site investigation and bore-hole testing, deep excavation, slurry walls, braced cut systems, slope stability technologies, debris flow mitigation, tunneling, piling, NDT methods, seismic design, PBDA, and so on. The course consists of lectures, field trips and discussions.

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.

Ph.D. Program

E1349 City Theory (0/2): This course focuses on various urban theories and provides a critical review of existing literature on cities. Thus, here, the analysis is a deconstruction of the tools of a particular reality. Through this process, we will be able to provide students with further direction on their future research.

E3330 Design Media and Computation (2/0): 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 course is to introduce different types of important design studies conducted from the 70s to date and to examine the methodologies necessary to address the study of design. To do so, the course is divided into two modules. They are (1) primary theoretical approaches; and (2) theoretical practice and proposal writing.

E3336 Special Issues of E-Business in Construction Industry (0/3): This course brings the concepts and primary issues related to automation in construction to students. Several topics are included in this course, namely construction productivity, applications of automation in construction, computerization for construction management, e-commerce in construction, enterprise resource planning and supply chain management.

E0429 Advanced Finite Element Methods (3/0): The major focus of this course is theoretic development and the application of the Finite Element Method (FEM). In the beginning, basic concepts of FEM are briefly reviewed. Then, the FEM of nonlinear material and dynamic problems will be introduced. The application of FEM-based reliability analysis and optimization problems will also be addressed.
E0754 Elasticity (3/0): Emphasis is placed on static problems with linear material and small deformation. Many basic 2-D problems (such as plane strain and plane stress) and 3-D problems with different boundary conditions in civil engineering application will be discussed. Torsion and plate theories will be also introduced.

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.

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 soil media due to dynamic loading.

E1604 Constitutive Laws for Engineering Materials (3/0): The contents of the course include a review and description of conventional models and an introduction to recent models for geologic materials. Theories of soil plasticity and their numerical implementation into computer programs are presented in the course.

E1642 Theory of Random Vibrations (3/0): This course offers an introduction to random vibration theory, correlation, Fourier analysis, spectral density, digital spectral analysis, statistics of narrow band processes, and Excitation-response relations for linear systems.

E1693 Special Topics in Civil Engineering Materials (3/0): This course offers guided readings in literature related to civil engineering. Discussions and reports of subjects in civil engineering are not normally available in regular course offerings.

E1831 Structural Control (0/3): Concepts of structural control will be systematically presented. First section: passive devices and applications, including energy dissipation devices and base-isolation devices. Second section: basic theory for SISO control and modern control theories for MIMO systems, the LQR method, etc.

E1837 Advanced Pavement Analysis and Design (3/0): Major topics explored include: functional requirements and performance, pioneer pavement analysis (review and LTPP), pioneer pavement analysis (plate vs. layered elastic theory), numerical methods of pavement analysis (review), numerical methods of pavement analysis (finite element analysis), aircraft traffic considerations (gear configurations and loads), aircraft traffic considerations (pass to coverage ratio), environmental and geotechnical considerations, design of asphalt concrete pavement systems (AASHTO method, FAA method, & AI method), design of PCC pavement systems (FAA method & PCA method—TKUPAV), miscellaneous considerations (ACN-PCN, life cycle costing, overlay designs, and the unified approach).

E1930 Earthquake Engineering (0/3): This course covers theories and applications related to earthquake engineering. The broad subjects discussed in this course include responses to earthquakes by linearly elastic and inelastic buildings, as well as structural dynamics in building codes.

E1955 Winded Bridge Analysis (0/3): Topics include the concept of wind loads on bridges, buffeting, evaluation of uncoupled mode buffeting and flutter, vibration control, vortex shedding and time series simulation of wind loads.

E2111 Pavement Management System (0/3): This course introduces fundamental concepts and techniques of pavement management, including database, prioritizing and budgeting activities on both network and project levels.

E2112 Soil Rodeology (0/3): This course includes soil formation and soil deposits, effective stress concepts, soil structure and soil stability, and conduction phenomena composition and engineering properties.

E2341 Green Architecture (2/0): This course explores topics such as: solar use during the Greek era, recognizing ecology, passive solar and environmental consciousness in the last century, and the study
of past materials, to encourage the further research of sustainable architectural designs.

**E2615 Design Thinking and Cognition (2/0):** 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.

**E2616 Environment Behavior Research (2/0):** This course focuses on the development of environment-behavior research, including epistemological, theoretical, methodological and implicational issues. Empirical studies will also be discussed in relation to each topic and issue.

**E2617 Field Work Methods (0/2):** This course emphasizes the use and validity of methods used in data gathering and analysis in the conduct of fieldworks. Philosophical, theoretical and operational concerns in relation to the methods will be discussed.

**E2618 Seminar on Taiwan Modern Architecture & Urban Development (0/2):** This course focuses on Taiwan’s modern architecture and urban development after World War II. Students are required to read texts and participate in discussions.

**E2619 Planning of Urban Ecological Environment (0/2):** This course discusses the theory of sustainable architecture. Students are required to evaluate green buildings and sustainable architecture technology regulations, and critique the practice policy and process.

**E2692 Introduction of Maintenance Engineering (0/3):** This course introduces both concepts and contents of proactive maintenance engineering. It combines various aspects of civil engineering, including structural engineering, geotechnical engineering, material engineering, IT, and project management. Main topics of maintenance engineering are:
1. Facility Inventory
2. Performance Assessment-Prioritization
3. Maintenance Strategy
4. Maintenance Measurements
5. Execution of Maintenance Engineering.

**E2753 Graduate Seminar (1/1):** This course is particularly designed for Ph.D. students, to provide them with a discussion platform from which to strengthen their presentation and communication skills in English. With the objective mentioned above, the contents of the syllabus can be flexibly arranged to suit the needs of the enrolled students, depending on what the instructor wants to emphasize. Routine practice involves asking students to prepare presentation materials based on the course literature or their own research findings and giving a presentation in English. This is then followed by an open discussion with all of the class participants.

**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.

**E3097 Contemporary Technologies in Architecture and Buildings (0/2):** With the advancements in building technologies and computer remote control, modern building systems should create a convenient, safe, healthy, and comfortable living environment for residents. The successful deployment of these systems in a building requires feasible and accurate equipment assessment. This course provides a general understanding of the state-of-the-art technologies used in complex multi-disciplinary building projects.

**E3132 Architecture and Sustainable Technology Study (2/0):** This course offers an introduction to existing sustainable technology in architectural design. The course will take the form of classroom discussions, with half of the topics assigned before the course starts, and the other half discussed in the classroom. Students are required to present their chosen issues for their midterm and final reports.
E3201 Stress Wave Propagation (3/0): This course introduces the basic theoretical framework of elastic waves and discusses the behavior and characteristics of elastic wave propagation in the media of various shapes. Elastic waves are widely used in many engineering applications such as non-destructive inspection, geophysical study, medical ultrasonic imaging and physical acoustics.

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.

E1349 City Theory (0/2): This course is mainly for critical review of the city’s existing research literature. Thus, here, the analysis is a deconstruction of the tools of a particular reality which will be able to provide further direction of research.

E3330 Design Media and Computation (2/0): 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 course is to introduce different types of important design studies conducted from the 70s to date and to examine the methodologies necessary to address the study of design. To do so, the course is divided into two modules. They are (1) primary theoretical approaches; and (2) theoretical practice and proposal writing.
DEPARTMENT OF WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

Degrees Offered: Bachelor of Engineering, Master of Engineering, and Ph.D.

Chairman: Chang, Li-chiu (張麗秋)

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 covers a broad range of knowledge required for water resources and environmental majors. The program is 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, Environmental Engineering and Wind Tunnels. Its low-speed wind tunnel is one of the best in Taiwan, with a cross-section of 3.2 meters*2.0 meters and an 18m long test section with a maximum power of 75 hp.

Faculty

Professors
Shih, Kuo-kung (施國肱); Lu, Po-chien (盧博堅); Chiang, Hsu-cherng (江旭程);
Yu, Gwo-hsing (虞國興); Gau, Sue-huai (高思懷); Hsu, Chung-chieh (許中杰);
Kang, Shyh-fang (康世芳); Li, Chi-wang (李奇旺); Chang, Li-chiu (張麗秋)

Associate Professors
Chang, Pao-hsing (張保興); Chen, Luke-Chen (陳俊成); Huang, Fu-Kuo (黃富國); Hsu, Tau-being (許道平); Lee, Po-ching (李柏青)

Assistant Professors
Su, Shih-Feng (蘇仕峯); Tsai, Hsiao-Chung (蔡孝忠)

Degree Requirements

1. Requirements for a degree of Bachelor in Engineering:
   Successful completion of 144 credits of courses, including 100 credits of required courses and 28 credits of elective courses. 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 3 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: 33 (including 6 dissertation credits). Courses include advanced theories in water resources engineering and environmental engineering with a required seminar.

Course Descriptions
Undergraduate Courses

E3234 Introduction to Water Quality Management (2/0): This course introduces regulations and general concepts related to water quality and its meanings and applications to water resource management. Course content includes regulations in water quality management, water and waste water treatment, control of river pollution and lake eutrophication, microbiological, physical and chemical indicators of water quality, and case studies.

E0010 Soil Mechanics (0/3): This course deals with 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.

E0012 Introduction to Air Pollution (0/3): 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.

E0028 Engineering Statistics (3/0): 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 (2/2): Basic graphic specifications that include lines, projection, sectional plane, dimension and three-dimensional drawings are introduced.

E0035 Engineering Mathematics I (0/3): 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.

E0036 Engineering Mathematics II (3/0): 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.

E0037 Engineering Mathematics III (0/2): 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 (3/0): This course introduces concepts in hydrologic design, flood routing, hydrologic models, basic probability and statistics, frequency analysis, hydrologic statistics, and simple linear regression.

E0094 Water and Land Resources (0/2): Topics covered include: the hydrologic cycle, global water distribution, water resources in Taiwan, the impact of urbanization, regional planning, land usage management, sustainable development, and ecological considerations in planning.

E0102 Hydrology (0/3): Covering hydrologic processes and analysis related to water quantity, this course is designed as an introductory course to hydrology.

E0108 Water Resources Engineering (3/0): This course introduces concepts in hydraulic machinery,
hydroelectric power, drainage, flood-damage mitigation, dams, and reservoirs.

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.

E0120 Engineering Geology (2/0): Topics 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.

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 (3/0): 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 (0/3): This course touches on the mechanics of groundwater, reservoirs, spillways, gates and outlet works, pen channels, pressure conduits, hydraulic machinery, hydraulic power, drainage, flood-damage mitigation, planning for water resources development, engineering economics gravity dams, arch dams, buttress dams, earth dams.

E0255 Surveying Lab I (1/0): This course is designed to deal with the measurement of distance, horizontal angles, vertical angles, leveling profiles and cross sections.

E0300 Fluid Mechanics (0/3): 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 defraction and wave refraction are also covered.

E0588 Surveying I (2/0): Introduction to basic definitions and descriptions of operations in surveying, simplified manner survey measurements and their associated errors. General topics covered include: distance measurement, leveling, and angle and direction measurement.

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 characteristic of water supply, application of pipe hydraulics in design water system, pump and pumping station design, introduction of distribution system, and introduction of water treatment processes.

E0617 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.

E0671 Engineering Application of Computer (2/2): This course is an introduction to numerical methods and computer software, with an emphasis on their applications to water resources and environmental engineering.

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.

E0874 Unit Operation of Environmental Engineering (0/2): This course offers an introduction to theories of environmental unit operation processes. Sedimentation, coagulation, filtration, ionic exchange, adsorption, and membrane processes are introduced in this course.

E0879 Introduction to Environmental Engineering (1/0): Topics include environmental issues in Taiwan, environmental issues in the world, air pollution, acid rain, green-house effect, solid waste problems, river pollution, drinking water and municipal wastewater treatment, as well as case studies.

E0962 Computer Aided Design (2/0): This course introduces sophisticated computer programs. Students are required to use these programs to carry out a small project.

E0969 Applied Mechanics (3/0): 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.

E0985 Air Pollution Control (3/0): This course will introduce 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.

E1034 Introduction to the Computer (0/2): This course focuses on basic concepts of the computer, learning Microsoft Excel and VBA, programming in C# and MATLAB, and scientific computing and problem solving methods for engineering students.

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.

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 (0/3): 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.

E1176 Engineering Economics (3/0): Course topics include economic equivalence and interest formula; present worth and annual equivalent worth analysis; rate of return analysis; benefit/cost analysis; depreciation; replacement analysis; inflation and economic analysis; project risk and uncertainty.

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.

E1472 Water and Wastewater Treatment (0/3): This course touches on drinking water standards, effluent standards, drinking water and wastewater treatment processes, coagulation, filtration,
disinfection, activated sludge process, bio-film processes, nutrients removal processes, and chemical and biological sludge treatment. It approaches instruction by the use of case studies.

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 (0/2): 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.

E1588 Introduction of Environmental Toxicology (0/2): This course is concerned with environmental toxic substances, fundamentals of toxicology, influences on the environment, risk assessment, risk characterization, hazard identification and risk management.

E1589 Irrigation and Drainage Engineering (0/2): Course topics include soil-moisture availability, infiltration rates, consumptive use, the irrigation method, layout of irrigation systems, drainage classification, drainage planning, inlet and outlet works, and the layout of drainage systems.

E1594 Design of Water Resources Engineering (0/2): Topics covered include hydrologic analysis, hydraulic analysis, structure analysis, design frequency, box culvert, stilling pool dam, detention pond, pipe culvert, seepage control, perforated pipe pump sump, retaining walls, end walls, wing walls, pipe distribution systems; surge tanks, water hammers, and storm drains.

E1595 Hazardous Waste Management and Design (0/3): Current hazardous management regulations are reviewed in this course. This course also introduces hazardous waste site management, risk assessment treatment, and disposal methods, such as physical-chemical methods, stabilization and solidification, thermal methods, and land disposal.

E1682 Noise and Vibration Control (0/3): 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.

E1684 Emission of Air Pollution (0/2): In this course, basic atmospheric science and the theory of dispersion are introduced. The application of the air pollution dispersion process is demonstrated. Mobile air pollution and global air pollution problems, such as global warming and ozone depletion, are discussed.

E1686 River and Flooding Engineering (0/3): This course introduces students to river hydraulics, land drainage, municipal stream drainage, the design flood, flood-mitigation reservoirs, level and flood walls, floodways, channel improvement, land management and flood mitigation, flood plain management, river hydraulics, and land drainage.

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.

E1688 Air Sampling and Monitoring (0/2): This course focuses primarily on methods to accurately collect the air sample and quantify the volume of gas collected. Five sampling categories will be covered. They include: sources sampling, ambient sampling, industrial hygiene air sampling, residential indoor sampling, and instrumental analysis.

E1689 Project Management for Engineering and Construction (0/3): This course provides instruction on earth work and equipment, foundation engineering and equipment, reinforcement work, pre-stressed and steel structure engineering, highway engineering, water resources engineering,
construction planning and management, quality control, and safety and sanitation management.

**E1800 Water Supply and Sewerage (3/0):** This course covers the following topics: water supply quality and quantity forecast and requirements, principles of hydraulic design of water supply and sewerage collection systems, storm water collection and system design, and principles involved in designing pumping stations.

**E1801 Applied Fluid Mechanics (3/0):** Topics covered in this course include viscous flow, potential flow, friction factor, moody chart, laminar boundary layer, turbulent boundary layer, power law, drag force and lift force, drag and lift coefficients, pressure coefficients, and displacement and momentum thickness.

**E1901 Water Quality Analysis Lab I (1/0):** In this course, students learn and apply current standard methods for water quality analysis. Water quality parameters such as BOD, COD, DO, and SS are covered.

**E1902 Water Quality Analysis Lab II (0/1):** 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.

**E2052 Solid Waste Management (0/3):** This course is an introduction to integrated solid waste management systems. It includes instruction on the following topics: legislation, sources, fundamental characteristics, collection and transportation, pretreatment, transformation, final disposal, and resource recovery and reuse.

**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.

**E2677 Environmental Analysis (2/0):** Our focus will be the analysis of environmental relevant process or compounds in 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 environmental chemistry case study.

**E3234 Introduction to Water Quality Management (2/0):** This course mainly introduces the regulations and general concepts related with water quality, and its meanings and applications on water resources management. The course contents include water quality management related with regulations, water and wastewater treatment, control of river pollution and lake eutrophication, microbiological, physical and chemical indicators of water quality, and case studies, etc.

**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 contains 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.

**E3355 Atmospheric Chemistry And Physics (0/3):** This course will introduce the physical and chemical behaviors of air pollutants in the atmosphere. The topics studied in this course include the urban photochemical smog, atmospheric aerosol, acid rain, depletion of ozone layer, global warming and air quality modeling.
E3356 Unit Operation And Laboratory For Environmental Engineering (0/3): (1) 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. (2) Students are familiar with the unit operations through practice and implementation.

M0153 Operations Research (0/2): This course touches on linear and dynamic programming, the simplex method, dynamic programming, project management with PERT/CPM, game theory, decision analysis Markov chains, and decision analysis.

S0251 Foundation Engineering (2/0): 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.

S0288 General Chemistry (2/0): This course introduces topics such as ozone depletion, global warming, new energy sources, nutrition, genetic engineering and polymers. Everything covered in the course is closely connected to chemistry.

S0289 General Chemistry Lab (1/0): This lab course focuses on the acid-base titration preparation of ethyl alcohol, the extraction of caffeine, the polymer synthesis paper chromatography of amino acids and synthesis of aspirin.

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.

Master’s Program

E0108 Water Resources Engineering (0/3): Topics discussed include: pressure conduits, hydraulic structure, weir, hydraulic drop, hydraulic jump, backwater, sedimentation, river pollution, water resource system, flood hydrology, flood routing, sediment routing, optimization, flood control, and applications of dynamic force.

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.


E0428 Advanced Hydrology (3/0): This course deals with the theory of extreme value and frequency analysis.

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).

E0440 Advanced Fluid Mechanics I (0/3): A study of stream function and velocity potential, ideal flows in plane, axis-symmetric and three-dimensional ideal flows, applications to inviscid flows.

E0441 Advanced Fluid Mechanics II (0/3): This course offers a study of conservation equations for viscous compressible fluids and includes applications to Newtonian viscous flow, vorticity dynamics,
flows at moderate Reynolds numbers, low Reynolds number flows, and boundary layers.

**E0740 Engineering Measurements (0/2):** Application of electronic instrument systems; measuring devices; manipulation, transmission, and recording of data.

**E0767 Numerical Analysis in Fluid Dynamics (0/3):** Gauss elimination method, Gauss-Jordan method, power method, characteristics method, stability and convergence, finite difference method, finite element method, nonlinear system, Runge-Kutta method, shooting method, numerical differential, numerical integral, Newton-Raphson method.

**E0768 Numerical Method (3/0):** Students learn the numerical methods for solving engineering problems.

**E0976 Water Quality Management (3/0):** 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.

**E0980 Mechanics of Sediment Transport (0/2):** This course explores properties of sediments, erosion of sediments, suspension of sediments, initiation of solid particle motion, analyses of bed load, suspended load and total.

**E0984 Air Pollution Meteorology (0/3):** This course is an introduction to atmospheric structure and dynamics, micrometeorology and planetary boundary layer, turbulent diffusion, and air quality models.

**E1000 Drainage Design and Planning (0/2):** This course introduces concepts related to pond design, highway drainage, urban drainage, land drainage, open channel design, culvert drainage, unsteady non-uniform flow, dynamic wave model, diffusion wave model, kinematic wave model, drainage case study, study of the factor of safety.

**E1023 Computer Applications in Environmental Engineering (0/2):** Integrated environmental design, data management, and problem solving skills with computer tools and techniques. Computing and numerical methods, equation solvers, graphical analysis and scientific visualization, EPA and USGS software.

**E1025 Environmental System Analysis (0/3):** Probability functions, random variables, densities and distributions; special distributions; estimation hypothesis testing; normal distribution; two-sample problem; goodness-of-fit tests; regression, project management with PERT/CPM.

**E1089 Environmental Toxicology (0/2):** This course concerns toxicity tests, dose-effect relationships, biotransformation, acute and chronic effects, toxicity absorption, distribution, elimination, risk assessment and management, exposure and monitoring.

**E1123 Oceanic Wave Theory (0/2):** An introduction to wave theory, including small amplitude wave theory and non-linear wave theory. The formation of waves due to the change of water depth effect. The phenomenon analysis of wave reflection, wave defraction and wave refraction.

**E1132 Water Resources System Planning and Analysis (0/3):** The concept and methodology of system approach are first introduced. Then practical applications in water resource planning are discussed by means of case studies.

**E1144 Environmental Instrument Analysis (0/2):** 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.

**E1162 Aquatic Chemistry (3/0):** 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.

**E1225 Computational Hydraulics (2/0):** Topics covered include mathematical formulation of the physical process; boundary and initial conditions; solution techniques; finite difference schemes; model calibration and data needs; one and two-dimensional models in rivers; two-dimensional models in free surface.

**E1336 Grand Water Hydraulics (3/0):** Occurrence of ground water; ground water movement; inflows and ground water; governing equations; steady and unsteady flows in a confined saturated aquifer; steady and unsteady flows in an unconfined saturated aquifer.

**E1523 Air Pollution Control Engineering (0/3):** Advanced theories and applications of control technology for air pollution such as VOC, NOx, SO2, PM are introduced. The basic theories include combustion, absorption, mass balance, energy balance and mass and heat transfer. The applications include the design process for incinerators, catalyst reduction facilities, scrubbers, activated carbon adsorption, cyclone, ESP and fabric filters.

**E1625 Environmental Modeling (0/2):** The theory of pollutant transport process is introduced. The application of the pollutant transport for determining the fate and the transport of pollutants among water, air, and soil, sediment and suspended particulate is demonstrated.

**E1627 Environmental Organic Chemistry (0/2):** This course concerns how molecular interactions and macroscopic transport phenomena determine the distribution in space and time of organic compounds released into the natural environment. Emphasis is placed on how to utilize the structure of a chemical to deduce that chemical’s physical properties and reactivity and on the quantification of the process at each level.

**E1683 Soil Pollution and Remediation (0/2):** Topics include soil pollution control, soil chemistry, soil physics, soil pollutants, the transport and fate of pollutants within soils, adsorption and absorption of pollutants, bioremediation technology, chemical remediation technology, case studies.

**E1747 Environmental Decisions and Management (0/2):** Topics include environmental public policy development, economic criteria, efficiency, cost-effectiveness, allocation efficiency, multi-objective decision problems, utility theory concepts, risk analysis.

**E1764 Environmental Sampling and Monitoring (0/2):** This course focuses on environmental sampling techniques and devices for sampling different matrices, including air, water, soil, sediment and stack, preservation techniques for volatile organic compounds, and semi-volatile organic compounds in water samples.

**E1854 Ground Water and Ground Water Pollution (0/2):** Topics include: Darcy’s Law; the well-flow system; unsaturated flow; mass transport in saturated media; mass transport in the vadose zone.

**E2018 Sediment Transport (0/3):** Fundamentals; mechanical properties of the flow; dimensionless expression of the two-phase phenomenon; the beginning of sediment transport and sediment transport rate; and the distribution of suspended loads.

**E2098 Watershed Management (0/3):** Planning and analysis of water resource systems, water resource planning and management, introduction to water resource policies, and an introduction to hydraulic engineering projects.

**E2099 Air Quality Modeling (0/3):** This course introduces numerous air quality models, including Gaussian models, Lagrangian models, and sophisticated grid models for urban and regional air quality.
E2594 Risk and Decision Analysis (0/3): Objective structure, tradeoffs under certainty, expected utility theory, decision tree, risk assessment technique, and probabilistic risk assessment.

E2660 Water Resource Management (0/3): Water resource projects involve designing facilities and other measures that control, utilize, or limit the use of water. Water resource management refers to the planning, construction and operation of water resource projects. The general process and detailed methodologies employed in water resource management are discussed in the course.

E2661 Air Quality Management (0/3): Introduction to air quality management systems, emissions inventories, stack sampling, monitoring of air quality, applications of air quality models, environmental damage assessment, technical measures, costs and benefits analysis, policy instruments, and air quality improvement action plans.

E2684 Physical and Chemical Treatment Processes (0/3): 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.

S0481 Environmental Microbiological (0/3): Topics include basic microbiology; microorganism growth; microorganism control; water and microorganisms; soil and microorganisms; pollution control and microorganisms.

T0140 Seminar (1/1)

Ph.D. Program

E0046 Industrial Wastewater Treatment (0/3): This course reviews the basic and advanced topics in chemical treatment methods. Current research on the advance of industrial wastewater treatment is covered.

E0149 Ground Water Analysis (0/3): Topics include: occurrence; groundwater hydraulics wells; yield; artificial recharge; and groundwater quality.

E0179 Stochastic Hydrology (0/3): Stationary and non-stationary time series models, model selection and identification, diagnostic checking, seasonal time series model, and signal detection.

E0501 Statistical Hydrology (3/0): Applied probability and statistical methods, hydrologic frequency analysis, selection and evaluation of parent distribution, parameter and quantity estimation, and probability distribution family.

E1005 Turbulent Flow (0/3): Study of turbulent transport of momentum and heat, the dynamics of turbulence, boundary-free shear flows, wall-bounded shear flows, statistical description of turbulence, turbulent transport, spectral dynamics.

E1081 Perturbation Theory (0/3): Straightforward expansions and sources of non-uniformity; the method of coordinates; the method of matched and composite asymptotic expansion; variation of parametric boundary-free shear flows; wall-bounded shear flow.

E1130 Special Topics of Water Resources Engineering (0/3): This course addresses advanced topics in water resource engineering and is flexible to suit the needs of individual Ph.D. students.

E1272 Computational Fluid Mechanics (3/0): Mathematical description of physical phenomena; discretization methods; heat conduction; convection and diffusion; calculation of the flow field; simulation of heat and mass transport; case studies.

E1330 Special Topics in Air Pollution (3/0): Urban and regional air quality models, mesoscale meteorology models, mathematical modeling for tropospheric ozone, acid rain and secondary aerosol.

E1416 Environmental Decision Methods (0/3): Multi-objective decision concepts, scales of measurement, utility theory, expected utility theory, direct assessment of multi-attribute utility function,

E1417 Special Topic in Hydrologic Analysis (0/3): Basic probability and statistics, simple and general linear regression, correlation analysis and nonlinear regression, generalized unvaried time series analysis in hydrology, and multivariate time series analysis.

E1418 Solid Waste Landfill (3/0): An advanced discussion of the planning and design of the landfill, which includes the biological theory, leachate handling, gas production and utilization, site reclamation, ash landfill, and seashore landfill.

E1748 Sludge Management (0/3): An advanced discussion about water and wastewater treatment sludge management, which includes the sources and characteristics, thickening, stabilization, disinfection, conditioning, dewatering, drying, incineration, melting, solidification, and utilization.

E2743 Resource recovery and reuse (0/3): An advanced discussion about the technologies and management of resource recovery and reuse from municipal solid waste, industrial waste, agricultural waste and incinerator ashes.


E1853 Environmental Risk Analysis (0/3): Policy analysis versus natural science, philosophical analysis, an example of reactor, safety, the nature and sources of uncertainty, statistical estimation, human judgment of uncertainty, techniques for encoding probability, large and complex models.

E2020 Chemistry for Environmental Engineering (0/3): Toxic chemicals in drinking water, disinfection by-products, toxic chemicals in wastewater, chemical reaction in advanced oxidation processes, chemical kinetic reactions, acids and base reactions, reduction and oxidation chemistry, chemistry of metal-organics complex.

E2099 Air Quality Modeling (0/3): Air pollution meteorology, turbulent diffusion, Gaussian models, Lagrangian models, Eulerian Models, photochemical air pollution, acid deposition.

E2100 Special Topics in Contaminant Transportation Models (0/3): This course reviews a fundamental theory on transportation models of contaminants. Students should familiarize themselves with these models through discussion and reading of journal papers related to transportation models of contaminants.

E2101 Environmental Ultratrace Analysis (0/3): This course focuses on inorganic trace analysis, sample preparation techniques, organic trace analysis, extraction method, high performance gas chromatography / high resolution mass spectroscopy.

E2102 Special Topics in Physical-chemical Processes (0/3): Fenton and photo-Fenton processes, activated absorption, MF/UF/NF/RO membrane processes, nutrient removal and recycling, reduction and reuse of chemical sludge, water recycle and reuse, chemical processes for soil remediation, case studies.

E2323 Specific Topics in Aquatic Chemistry (0/3): This course focuses mainly on oxidation/ reduction chemistry, experimental and fundamental electrochemistry, and reading and discussing of journal papers on these topics.

E2656 Transport Process in Environmental System (0/3): Topics include: (1) the introduction of macro and micro transport processes; (2) Applications of energy and rate relationships in homogeneous and heterogeneous systems; and (3) Applications of reactor engineering in steady, unsteady homogeneous and heterogeneous systems.

S0562 Atmospheric Chemistry (0/3): This course involves photochemistry, properties of aerosol,
organic atmospheric aerosol, wet deposition, chemical transport model and ozone.

T0140 Seminar (2)
DEPARTMENT OF MECHANICAL AND ELECTRO-MECHANICAL ENGINEERING

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

Chairman: Yang, Lung-jieh (楊龍杰)

The Department

The department, found in 1970, offers B.S., M.S. and Ph.D. degrees. The B.S. and M.S. programs have two divisions: Precision Mechanics and Opto-Mechatronics.

- Precision Mechanics emphasizes the practical aspects of computer-aided design (CAD), manufacturing and micro/nano technologies.
- Opto-Mechatronics spans over robotics, automation, mechatronics and control.

The graduate program recently puts emphasis on intelligent engineering systems such as the biomimic flapping micro air vehicles (MAVs) and the Braille display for blind computers. Knowledge of expertise (Head), hands-on skill (Hand), love of learning (Heart) and innovative vision (Eye) are four important core proficiencies (3H1E) provided by the department to all students.

Faculty

Professors
Chao, Choung-lii (趙崇禮); Kang, Shung-wen (康尚文); Lee, Tzung-hang (李宗翰);
Lin, Ching-bin (林清彬); Liu, Chao-hwa (劉昭華); Shih, Chien-jong (史建中);
Tsay, Huoy-shyi (蔡慧駿); Yang, Lung-jieh (楊龍杰); Yeh, Fung-huei (葉豐輝);
Wang, Yin-tien (王銀添)

Associate Professors
Li, Ching-lun (李經綸); Yang, Jr-syu (楊智旭); Wu, Chyan-chyi (吳乾埼);
Liu, Cheng-Yang (劉承揚)

Assistant Professors
Sun, Chung-hsun (孫崇訓)

Degree Requirements

1. Requirements for a degree of B.S. in Mechanical and Electro-Mechanical Engineering:
   Completion of 146 credits of courses, including 102 credits of required courses and 44 credits of elective courses.

2. Requirements for a master’s degree: (degree offered in 3 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.

3. Requirements for a Ph.D. degree: (degree offered in 2 fields)
   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.


E3300 Introduction to Marine Energy (0/2): Applying a reusable energy perspective to view a range of subjects (from power resources to consumer products), this course describes the important principles of marine energy science and technology. By introducing students to the technical concepts behind the functioning of such items, this course hopes to inspire students to pursue a career in the field of marine energy.

E0038 Industrial Engineering (0/3): The purpose of this course is to help students understand the general methodology of IE. The course consists of four parts: planning, design, production and management.

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.

E0231 Materials and Metallurgy Testing Lab. (1/0): Tensile and torsion strength test; impact test; Rockwell; Brinell and Vickers hardness test; Fatigue test; microstructure of general and standard test; taking pictures of test specimens.

E0296 Fluid Mechanics Laboratory (0/1): Error estimation; manometers; Pitot tube; Bourden gauge calibration; static water pressure; forced vortex; Reynolds experiment; hydraulic bench; open channel; Venna contracta; impact experiment; Venturi tube; orifice meter; head loss measurement.

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.

E0445 Intermediate Dynamics (0/3): Principle of impulse and momentum for three dimensional motion of a rigid body; Euler’s equations of motion; principles of virtual work; Lagrange’s equations of motion; dynamic balancing of rotating machinery.

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.

E3262 Engineering Applications of Computers (I) (2/0): This course covers methods for solving single-variable equations, interpolation and polynomial approximation, numerical integration and differentiation.

E3263 Engineering Applications of Computers (II) (0/2): This course covers methods for solving numerical integration and differentiation, first order and higher order ODE, and PDE.

E3080 Electrical Engineering and Electronics Lab (1/0): This course offers a series of experiments designed to help students learn the basic principles of electronic devices and gain hands-on experience in their applications.

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.

**E0777 Thermal Engineering Lab (1/0):** Steam power plant; heat exchanger; heat conduction unit; thermal conductivity of liquid and gas unit; natural convection; thermal wind tunnel; CPU cooler unit.

**E0782 Heat Transfer (0/3):** 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 (2/0):** 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.

**E2410 Fundamentals of Mechanical and Electro-Mechanical Engineering (0/1):** This is a freshman course designed to introduce basic concepts about mechanical and electro-mechanical engineering to beginning engineering students.

**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 Processes (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.

**E0867 Applied Mechanics (I): (Statics) (0/2):** Fundamental principles, statistics of particles, equivalent systems of forces, equilibrium of rigid bodies, centroids and centers of gravity, analysis of structures, forces in beams and cables, friction, moment of inertia, method of virtual work.

**E0722 Circuit Theory (0/3):** 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.

**E0868 Applied Mechanics (II): (Dynamics) (3/0):** Kinematics of particles, kinetics of particles, Newton’s second law, energy and momentum methods, systems of particles, kinematics of rigid bodies, kinetics of rigid bodies, introduction to mechanical vibration.
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 (3/0): 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.

E3119 Energy and the Environment (0/3): This course introduces the fundamental relationship of energy use and environmental issues, pollution control technologies and waste management strategies, while reviewing the current status of renewable and non-renewable energy sources. The course emphasizes the importance of finding the equilibrium between technology and environmental protection.

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 (3/0): 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.

E3404 Advanced Computer Graphics (0/3): This course teaches student how to use the three-dimensional computer-aided design software and draft the mechanical elements. The motion and structural simulations will also be exercised. The students will build the three-dimensional models in practice. The rapid prototyping and precise machine design will be achieved.

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 Fundamentals of Mechanical Vibrations (3/0): 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.

**E3229 History of Fluidic Machine (2/0):** This course provides an introduction to the development of machinery throughout human history to inspire and motivate students to pursue further studies in the field of mechanical engineering.

**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.

**E2291 Microprocessor Applications Lab (0/1):** This course conducts a series of application experiments on microprocessors. The applications include timers, counters, serial ports, external memory, and external I/O, ADC, DAC, 8255 interfaces.

**E3087 History of Machine Science & Technology (2/0):** This course provides an introduction to the development of machinery throughout human history to inspire and motivate students to pursue further studies in the field of mechanical engineering.

**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.

**E3125 Electronic Packaging (0/2):** This course provides a practical introduction to the electronic packaging issues of the semiconductor industry.

**S0434 Engineering 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 (3/0):** 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 (0/3):** 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 to apply CAM software and to finish their final project.

**E2040 The Processing Machines of Microchip Fabrication (0/3):** This course provides a general understanding of the processing machines of microchip fabrication, involving the system integration of
electronics, material science, physics, chemistry, and mechanics.

E2238 Applied Design Optimization (3/0): This course details the theory and application of optimization techniques that arise in mechanical engineering design. In addition to the mathematical fundamentals of gradient-base techniques, the major focus of the course is the unconstrained and constrained programming of numerical methods. A well-developed commercial package optimizer is used in the course and is integrated with the user’s simulation program. Several mechanical structural design problems are explored throughout the course.

E3298 Surface Engineering of Materials (0/3): This course provides students with basic concepts on physical and chemical properties in material surface treatment. Topics include the principles and technology involved in electroplating, evaporation technology, principles of physical vapor deposition (PVD), principles of chemical vapor deposition (CVD), sputtering plating techniques, the anodized treatment of principle and technology, deposited surface analysis and measurement.

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 Fundamentals 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.

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, isoparametric 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 (3/0): 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.

E0754 Elasticity (3/0): Stress; strain; compatibility condition; stress-strain relation; displacement formulation and stress formulation of elasticity problems; St. Venant theories of torsion and bending; general curvilinear coordinates; 2-D and 3-D elasticity; Green’s function approach.
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.

E1846 Theory and Applications in Metal Forming (3/0): The purpose of this course is to introduce the theory and applications in metal forming commonly used by scientists and engineers. This course includes the following subjects: (1) The Tensile Test and Basic Material Behavior, (2) Tensors and Matrices, (3) Stress and Strain, (4) Standard Mechanical Principles, (5) Elasticity and Plasticity, and (6) Classical Forming Analysis.

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.

E2063 Ultra-Precision Machining Processes (3/0): This course covers fundamentals and applications of Precision Machining Processes. Topics such as Optical/Mechanical Metrology Systems, Precision Machine Tools, Single Point Diamond Turning, Machining of Aspheric/Diffractive Optical Components, Precision Diamond Grinding, Precision Lapping/Polishing, and Energy Beam Machining Processes will be addressed and discussed.

E2124 Engineering Materials (3/0): This course includes seven main sections: structure of materials, properties of materials, metals, non-metallic materials, semiconductors, composites, and material selection.

E2245 Digital Control System (3/0): General introduction to digital control systems, z-plane analysis, design of a digital control system, state-space analysis, pole placement and observer design, optimal control, and Kalman filtering theory.

E2398 Linear Control Systems (3/0): Review classical control, analysis, design; state space modeling; state equation; transfer function, block diagram; system characteristics; stability; Lyapunov theory; controllability; observability; control design; pole-placement; observer design.

E2506 Fundamentals of Robotics (3/0): This course provides students with basic concepts in the field of Robotics. Topics include kinematics and differential kinematics of robots, trajectory planning, robot perception, robot vision, and image processing. The robots studied in this course include industrial manipulators, wheeled mobile robots, and legged mobile robots.

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.

S0408 Design of Experiments (3/0): Experimental design is a tool that engineers and scientists use for product design and development as well as process development and improvement. The use of experimental design early in the product cycle can substantially reduce development time and cost, leading to processes and products that perform better and are reliable. The topics covered in the course include the simple comparative experiments, the analysis of variance, various factorial designs, fitting regression models, response surface methods and robust parameter designs with the aid of computer software.

S0684 Applied Optics (3/0): Nano-optics is the study of optical phenomena and techniques on the nanometer scale; that is, near or beyond the diffraction limit of light. This course covers the following topics: propagation and focusing of optical fields, optical characteristics in nano-scale, nano-scale optical microscopy, near-field optical probes, photonic crystals, surface plasmons and examples in applied nano-optics.

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.

**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.

**E1389 Intelligent Control (0/3):** This course will introduce the theory of intelligent control. It will also explore differences between theory and practice in this area so as to enhance students’ ability to make decisions.

**E1991 Vibration Control of Mechanical Systems (0/3):** This course provides concepts and analytical methods for the vibration control of mechanical systems. A review of free and forced vibrations of mechanical systems, both undamped and damped, sensors, actuators, passive control, active control adaptive control, and case studies will be covered in this course.

**E2463 Robot Control (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 make a class presentation.

**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 biochips, protein chip, DDS chip and Lab on a chip will be introduced. The types, properties and applications of nano-materials will also be discussed.

**E2626 Fundamental Properties of Materials (0/3):** This course is organized into two parts: (1) Engineering properties of various classes of materials. Important topics include: mechanical properties, electrical properties, optical and dielectric properties, magnetic properties, thermal properties; (2) Interactions between the environment and properties of materials. Important topics include: liquid-solid reactions, gas-solid reactions, solid-solid reactions and radiation damage.

**E2947 Principles of Engineering Metrology (0/3):** 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, and diffraction / photoelectric detectors will be addressed and discussed.

**E3000 Optomechatronic System Design and Integration (0/3):** This course covers fundamentals of optics; machine vision; mechatronic elements for optomechatronic interfaces; optomechatronic integration; basic optomechatronic functional units; and optomechatronic systems in practice.

**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.

**E2886 Robotics (3/0):** This course provides students with basic concepts in the field of robotics. Topics include robot kinematics, trajectory planning, robot perception, and robot navigation. The robots studied in this course include wheeled mobile robots, legged mobile robots, and industrial manipulators.

**E3439 Visual Measurement And Estimation (0/2):** This course covers some fundamental topics in robot visual measurement and estimation, including deterministic measurement methods, visual odometry, uncertainty in robotics, estimation methods, mobile robot localization, image features and
data association, and simultaneous localization and mapping (SLAM). Students are requested to read papers, do three small projects, and present in the class.

**Ph.D. Program**

**E1778 Technical Writing (I) (2/0):** This course offers an introduction to general English technical writing. It involves instruction in correct formats and suitable expressions. Course requirements include in-class and homework writing tasks, as well as discussions, to improve students’ capability in English technical writing and expression.

**E2984 Flapping Flight (3/0):** This course provides a general introduction to flapping science and technology, from its theoretical background to hands-on work.

**E3236 Numerical Model Edifice for Ultra-low Speed Bio-Flow Fields (2/0):** Biomedical technology is one of the major fields of the 21st century. It has contributed greatly to research in the areas of genes, proteins, drugs, and even anti-aging. It has also assisted research into the development of bio-chips. Creating bio-chips involves designing micro-channels and analyzing flow-fields. The aim of this course is to train students in constructing numerical models to simulate flow-fields in micro-channels.

**E3237 Materials Design (3/0):** This course is organized into three parts: (1) Design, manufacturing, property and applications of energy-saving materials; (2) Design, manufacturing, property and applications of reversible chromatic materials; and (3) Design, manufacturing, property and applications of thermoelectric materials.

**E3327 Fuel Cell Fundamentals (3/0):** Fuel cell thermodynamics; fuel cell reaction kinetics (activation overpotential); fuel cell charge transport (ohmic overpotential); fuel cell mass transport (concentration overpotential); fuel crossover in fuel cells of low temperature; fuel cell efficiency; fuel cell characterization; modeling and performance indices; semi-empirical model and parameter fitting; fuel cell systems.

**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.

**E0002 Two Phase Flow (0/3):** Participants in this course will gain a phenomenological understanding of two-phase flow and heat transfer in engineering processes and components, as well as an ability to compute flow and heat transfer in common situations. It approaches two-phase flow and heat transfer in a practical, qualitative way rather than as a graduate level treatment with complex calculations and abstract situations. Basic quantitative calculations, including making sense of the myriad correlations that are given in texts and papers, will also be covered.

**E1779 Technical Writing (II) (0/2):** This course offers an introduction to general English technical writing, including correct formats and suitable expressions. Course requirements include in-class and homework writing tasks, as well as discussions, to improve students’ proficiency in English technical writing and expression.

**E2711 Numerical Simulation for Ultra-Low Speed Bio-Flow Fields (0/3):** Biomedical technology is one of the major fields of the 21st century. It has contributed greatly to research in the areas of genes, proteins, drugs, and even anti-aging. It has also assisted research into the development of bio-chips.Creating bio-chips involves designing micro-channels and analyzing flow-fields. The aim of this course is to train students in constructing numerical models to simulate flow-fields in micro-channels.

**E2937 Advanced Energy and Environment Control (0/2):** This course offers the most up-to-date and relevant knowledge on environment and energy subjects from world-wide sources. It is designed to lead graduate students to understand, analyze, and discuss the most important environmental issues.
impacting our lives.

**E2938 Advanced Energy Conversion (0/3):** 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.

**E3043 Advanced Engineering Optimization (0/3):** This course offers a continuing study of the fundamental principle of optimization that extends its further methodological and technical endeavors in various forms of optimization problems and multidisciplinary design optimization. Specific topics include mixed discrete variables, multiobjective optimization, fuzzy optimization, the approximation method, reliability-based design optimization, structural shape and topology optimization as well as related engineering applications.

**E3101 Special Topics on Micro Aerial Vehicles (0/3):** This course provides a general introduction to MAV technology, from its theoretical background to hands-on work involving flapping MAV “Golden-Snitch”.

**E3193 Computational Multi-Phase Fluid Dynamics (0/3):** In the field of fluid mechanics, multiphase flow is a generalization 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).

**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.

**E3376 Fuel Cell Modeling and Characterization (3/0):** Modeling and simulation of a variety of overpotentials and performance indices are conducted in this course, as well as diagnosis and characterization of a fuel cell system. The following topics will be introduced in the course: fuel cell thermodynamics and efficiency, reaction kinetics, charge transport, mass transport, fuel crossover in fuel cells of low temperature, fuel cell characterization and performance evaluation, polarization modeling, fuel permeation modeling, efficiency modeling, semi-empirical approach, and optimal control strategies.

**E3375 Science and Engineering of Thin Films (0/3) :** This course firstly introduces vacuum technology and kinetics of surface processes. The major content includes the vapor deposition processes, PVD and CVD, and film formation and structure. The methods of characterization of thin film will be briefly introduced. To take this course, students are required to have some background on Materials Science and in Thermodynamics of Materials.

**E3380 Material Physics (0/3):** The course focuses on the application and property of the various classes of physics. Important topics include: electrical physics, semiconductor physics, superconducting physics, magnetic physics, dielectric, optical physics and application, modern physics and nano-physics.

**E3440 Ecological Sciences (2/0):** To teach students to learn and research the interaction and influence among ecology, energy, environment, economics and ordinary living. To use practical subjects, using Considerations of technology and from the directions of overall benefits to the society to guide the students understand the importance of cooperation and mutual accommodation.
E3441 Functional Thin Film Processing (0/3): Functional thin film processes are crucial in understanding current and future electronic, magnetic, optical and chemical devices. This course covers the experimental and theoretical understanding of surface and functional thin film processes. Functional thin film processing services apply very thin layers of specialized materials to part surfaces. They perform processes such chemical vapor deposition (CVD), physical vapor deposition (PVD), ion implantation, electrochemical deposition (ECD), plasma etching, rapid thermal processing (RTP), and titanium nitride coating.

E3442 Optical Scattering and Photonics (0/3): Polarization-sensitive light-scattering measurements have the potential for providing a novel class of instrumentation for optical inspection and process-control applications both in and out of the optics industry. This course covers the following topics: introduction of optical scattering, scatter calculations and diffraction theory, electron-photon interaction, scatter measurements and instrumentation, detection of surface and subsurface defects, and industrial applications.
DEPARTMENT OF CHEMICAL AND
MATERIALS ENGINEERING

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

Chairman: Don, Trong-ming (董崇民)

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, the department has graduated more than 5000 alumni serving 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), respectively. By incorporating a wide selection of advanced courses and opportunity of conducting independent researches, students were trained to own in-depth cutting-edge knowledge, high-technical skills, and planning-organization capability that are vital to their future careers in industry or academia.

- Computer and software usage is 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 to ensure department curriculum conforms to 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 line with the rapidly evolving scientific environment, including nano-technology, biomaterial, and environmental control.

The faculty and staff of the Chemical and Materials Engineering Department aim to build the department into an internationally renowned center of excellence for research and education in its field.

Faculty

Professors
Chang, Cheng-liang (張正良); Chang, Hsuan (張媛); Chang, Yu-chi (張裕祺);
Chen, Hsi-jen (陳錫仁); Cheng, Liao-ping (鄭廖平); Cheng, Tung-wen (鄭東文);
Don, Trong-ming (董崇民); Ho, Chii-dong (何啟東); Hwang, Kuo-jen (黃國楨);
Yeh, Ho-ming (葉和明); Yu, Hsuan-fu (余宣賦); Lin, Dar-jong (林達鎔);
Wu, Rome-man (吳容銘); Kao, Huey-chuen (高惠春)

Associate Professors
Lin, Gwo-geng (林國賡); Lai, Wei-chi (賴偉淇); Chang, Chao-ching (張朝欽)

Assistant Professors
Chen, Yih-Hang (陳逸航); Hsu, Shih-chieh (許世杰); Lin, Cheng-Lan (林正嵐)

Degree Requirements

1. Requirements for a degree of Bachelor in Engineering:
   Completion of 142 credits of courses, including 99 credits of required courses and 28 credits of elective courses.

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.

**E0046 Industrial Wastewater Treatment (0/3)**: This introductory course covers the treatment of industrial wastewater by physical, chemical and biological processes, and sludge treatment and disposal.

**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.

**E0083 Chemical Processes Industries (0/3)**: The study of technical and economic problems in manufacturing chemicals, their necessary equipment and the uses of chemicals.

**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 (3/0)**: 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.

**E0131 Biochemical Engineering (0/3)**: Biochemical Engineering is a senior-level elective course for chemical engineering majors. The course contains three main parts: enzyme-mediated bioprocessing, whole-cell mediated bioprocessing, and downstream processing of bioproducts.

**E0182 Materials Science (0/3)**: An introduction to the applied physical and chemical principles of materials, and a presentation of fundamental types of engineering materials.

**E0416 Polymer Engineering (0/3)**: Prerequisite: permission of the instructor. Different syntheses of polymerization: step-growth, free radical, ionic, ring-opening and Ziegler-Natta; the characterization of polymers by thermodynamic study or spectroscopic methods; microstructure of polymers and their mechanical properties.

**E0420 Introduction to Polymer Science (0/3)**: This course offers a study of different classes of polymers, their synthesis and modification, thermodynamic, properties, equilibria, polymerization kinetics, and physical methods of characterization of polymers.

**E0596 Process Analysis and Simulation (0/3)**: The goal of this course is to bring students into contact
with the efficient computation tools to examine the overall process, alternative processes, and economics.

E0597 Process Control (0/3): 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 (4/0): An introduction to the basic principles and calculations of chemical engineering, presentation and discussion of mathematical procedures, material balance, fluid properties, and energy balance.

E0875 Environmental Engineering (0/3): Prerequisite: Permission of the instructor. This course offers an introduction to the general subjects of air, water and solid-waste management. Relationships between the principles observed in natural purification processes and those employed in engineering processes are discussed.

E0913 Membrane Separation Technology (0/3): Prerequisite: Transport Phenomena and Unit Operations I, and II. This course offers an introduction to membrane materials, the transport of membranes and the use of membranes for separations processes, such as reverse osmosis, ultrafiltration, microfiltration, dialysis, gas separation, electrodialysis, and pervaporation.

E0928 Special Topics in Thermodynamics (0/3): Prerequisite: some previous exposure to basic thermodynamics and calculus. The subject of this course is advanced thermodynamics with an emphasis on its applications to complex chemical engineering problems. The major elements of interest contain the analysis of system stability, multi-component phase equilibrium, chemical reaction equilibrium and process thermodynamics.

E1034 Introduction to Computers (2/2): The first part of this course includes detailed descriptions of computer hardware, the information transfer within a computer, and the use of commercial software packages (word processing, graphics and spreadsheets) and network communication. In the second part, programming skills using FORTRAN and other contemporary languages are presented.

E1046 Special Topics in Transport Phenomena (0/3): Prerequisite: Transport Phenomena and Unit Operation I and II and Separation Processes. This is a comprehensive course on transport phenomena of momentum, energy, and mass in continua. Presentation emphasizes the analytical procedures of the problems.

E1053 Introduction to Chemical Process Safety (0/3): Prerequisite: permission of the instructor. This is an introductory course that covers toxicology, industrial hygiene, source models, toxic release and dispersion models, fires and explosions, designs to prevent fires and explosions, hazard identification and risk assessment.

E1056 Creation, Invention and Patent (0/2): This course offers an introduction to the pathway for creation and invention and on how to enhance the ability to create and invent. Also introduced to the learners are the basic concept and practice of how to obtain and protect intellectual property rights such as invention, utility model, design, trademark and copyright in this country and foreign countries.

E1059 Biomedical Engineering (0/3): This course is open to those who would like to advance their knowledge beyond an introductory level of polymer biomaterial science and engineering. The course will present recent polymer applications in biomedical engineering. On completion of the course, students are expected to be able to understand the basic concepts involved in the design control of polymer biomaterials and their applications.

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.

**E1109 Mathematical Methods in Chemical Engineering (0/3):** Prerequisite: Engineering Mathematics. This is an extension of Engineering Mathematics. Emphasis is placed on the formulation and solution of ODEs and/or PDEs resulting from the mathematical modeling and problems encountered by chemical engineers.

**E1110 Pollution Control Lab (0/1):** Various operations, such as flotation, coagulation, neutralization, sedimentation, electrolysis, ultrafiltration, and rotating biological contactor, are researched to minimize the pollution of wastewater.

**E1238 Introduction to Advanced Ceramics (0/3):** Prerequisite: Material Science. This is an introductory course on advanced ceramics concerning the properties and application of materials, processing technology, microstructure effects, and measurement techniques.

**E1506 Introduction to Membrane Separations (0/3):** Prerequisite: Transport Phenomena and Unit Operations I, II. This is an introduction to membrane materials, the transport in membranes and the use of membranes for separation processes, such as reverse osmosis, ultrafiltration, microfiltration, dialysis, gas separation, electrodialysis, and pervaporation.

**E1518 Air Pollution Control Engineering (0/2):** This course offers an overview of air pollution control philosophies, including laws and regulations and pollution standards. The contents include simulation of air pollutant dispersion and its control, discussion on the strategy of different control technologies for stationary emission source, and the impact of air pollution on global climate and the consequences of international treaties are explored.

**E1530 Separation and Purification Techniques in Biotechnology (0/3):** This course offers an introduction to the separation and purification of biochemicals that can be made by fermentation or biochemical processes. These separations and purifications are difficult and frequently cost more than the initial manufacture of the biochemicals.

**E1531 Management of Radioactive Wastes (0/3):** This is an introductory course designed to provide senior students with an opportunity to enter the field of radwaste (radioactive waste) management. This course starts from the basics. The first half of the course will provide general knowledge of radiation, while the second half will focus on practical aspects of radwaste management.

**E1544 Introduction to Bioindustry (0/3):** This course focuses on the main characteristics of domestic industries and several biotechnology industries which the government is aggressively planning to promote: bulk pharmaceutical chemicals, medicine production, vaccine, biological pesticide, and flowering plant industries.

**E1862 Chemical Industry Waste Minimization (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.

**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. Since the Second World War, polymeric materials have been the fastest-growing segments of the chemical industry. In this course, the basic definition and classifications of polymers will be discussed. Then, a detailed discussion of the synthetic methods and reaction mechanisms will be given. After that, the relationships between the structures and properties of the polymers will be described. Finally, we will talk about the applications of the five major types of polymeric materials: (1) plastics, (2) rubbers or elastomers, (3) fibers, (4) surface finishes and protective coatings, and (5) adhesives.

**E2536 Foundations of Materials Science and Engineering (0/3):** The purpose of this course is to introduce students to the basic and applied knowledge of materials. Students will be able to describe the subject of materials science and engineering as a scientific discipline.
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.

E3350 Introduction to Chemical and Materials Engineering (3/0): 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.

M0022 Engineering Economics (2/0): This course includes 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.

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.

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.

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.

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.
T0136 Chemical Engineering Research (1/1): Prerequisite: Restricted to chemical engineering seniors.

Master’s Program

E0959 Advanced Fluid Dynamics (3/0): Vector and tensor concepts, specifically important in flow analysis, are presented. Basic laws of mass, momentum, and energy transports are to be derived. Solution methods for the following fields are discussed: viscous, potential, creeping and boundary layer flows. Some discussion covers the non-Newtonian flow behaviors.

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 (0/3): 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.

E1366 Chemical Process Optimization (0/3): This course covers the nature and organization of optimization problems, basic concepts of optimization, optimization of unconstrained functions, linear programming and applications, nonlinear programming with constraints, and applications of optimization in chemical engineering.

E1435 Advanced Heat and Mass Transfer (0/3): This course is an extension of transport phenomena on heat and mass transfer. Emphasis is placed on the analogies between conduction and diffusion as well as on convective heat and mass transfer.

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.

E1785 Colloidal Science and Particle Technology (0/3): This course covers the characterization of colloid and particles, their flow behavior, thermodynamics of surfaces, surface chemistry, particle interaction and coagulation, and their applications in chemical engineering.

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 (3/0): 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.

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.

E3024 Technical Manuscript (1) (3/0): This graduate course provides a methodological approach to revising the technical manuscript for Chinese students to receive international acceptance.

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.

E3035 Advanced Thermodynamics of Materials (3/0): This course considers the behavior of materials and is concerned with the structure, properties and performance of these materials. Thermodynamics of Materials is a key engineering science which provides a means of quantifying and predicting the equilibrium states of any material.

E3036 Selective Topics in Specialty Chemicals (0/3): Specialty chemicals are characterized as chemicals with special functions. They are sold on the basis of their performance, rather than for their composition. We will focus on several important specialty chemicals, including (1) electronic chemicals, (2) opto-tech-used organic chemicals, (3) materials for fuel cells and solar cells, (4) radiation curable coatings, (5) high performance thermoplastics, (6) nano-chemicals and materials, and (7) biotechnology products.

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.

E3069 Technical Manuscript (0/3): This graduate course provides students with research methods that will help their manuscripts gain international acceptance.

E3445 Technical Writing (1/0): This graduate course provides a methodological approach in guiding Chinese students to get the technical manuscript published. Selected papers published in the related fields will be demonstrated and discussed throughout this course.

T0140 Seminar (1/1)
T0993 Seminar II (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.

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 are 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.

E2370 Polyhyoxy Butyrate PHB (3/0): Polymer chemical reaction is designated to the modification of polymers, the functionalization of polymeric metericals covers plasma actionation, UV initiation and functional group reaction.

E2371 Select Topics of Membrane Filtration (3/0): Membrane filtration can be applied to the separation of fine particles and/or molecules ranging from submicro to nano scale. 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): Biodegradable polymers are certain to increase in importance as environmental contamination and waste disposal problems associated with plastics become more severe.

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.


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.

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)

T1002 Seminar (IV) (0/1)
DEPARTMENT OF ELECTRICAL ENGINEERING

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

Chairman : Chern, Shiu-n-Jang (陳巽璋)

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 of Robotics Engineering was established in 2007.

Currently, the Department has 27 full-time faculty members, all with Ph.D. degrees. Specialized research areas include: microwave communication, 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 nonlinear and dynamic controls.

Research facilities include the Optical Fiber Lab, VLSI Lab, Automatic Control Lab, Microwave Communication Lab, Parallel Processing Lab, Multimedia Lab, Cybernetics Lab, Signal Processing Lab, and Electrical Motor Lab, etc., in addition to basic experiment labs.

A minimum of 146, 29, and 24 credits are required for the Bachelor, Master’s, and Ph.D. degrees respectively. 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 Systems, Control Chips and Systems, and VLSI Design and Computer Systems. For the graduate program of Robotics Engineering, Intelligent Evolution and Embedded Systems are the two major study categories.

Faculty

Professors
Chiang, Jen-shiun (江正雄); Chiu, Chien-ching (丘建青); Chuang, Po-jen (莊博任);
Hsieh, Ching-tang (謝景棠); Jan, Yih-guan (詹益光); Lee, Yang-han (李揚漢);
Li, Ching-chieh (李慶烈); Wong, Ching-chang (翁慶昌); Lee, Wei-tsong (李維聰);
Chern, Shiu-n-Jang (陳巽璋); Lee, Tsu-Tian (李祖添)

Associate Professors
Chien, Cheng-chih (簡丞志); Chou, Yung-shan (周永山); Rau, Jiann-chyi (饒建奇);
Yang, Chun-liang (楊淳良); Yih, Chi-hsiao (易志孝); Hsu, Chun-Fei (許駿飛);
Chou, Chien-Hsing (周建興); Yang, Web-bin (楊維斌); Liu, Peter (劉寅春);
Tsai, Chi-Yi (蔡奇謚)

Assistant Professors
Shih, Hsien-yuan (施雅源); Li, Shih-An (李世安); Cheng, Chi-Tai (鄭吉泰);
Wei, Shin-wen (衛信文); Lee, Kelvin (李光啓); Chi, Yu-Jen (紀俞任)

Degree Requirements

1. Requirements for a Bachelor of Science degree in Electronics Engineering:
   Completion of 146 credits of courses, including 102 credits of compulsory courses and 229 credits of elective courses.

2. Requirements for a Master’s degree in Science:
   Completion of 29 credits of courses studies, including 5 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 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, publish at least one technical paper in any journals 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

E0034 Engineering Mathematics (3/3):

E0122 Semiconductor Devices (0/3):
Semiconductor devices are the key building block 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 Operating System is designed for managing the system resources, such as CPU, memory, and storage. This course will introduce the basic concept of operating system, including system structures, process concept, process scheduling and management, process synchronization, memory management, etc.

E0334 Computer Organization (3/0):
Introduction and historical development of the computer classification, stratified analysis the real mode of operation of computer systems, and describe a computer to perform the process of programs and instruction.

E0350 Computer Network (0/2):
The course will begin from lecture on layered network architecture and communication protocols. Then actually monitor the data packets transmitted via network by tools as WireShark and Estinet. At the end of semester students should deliver a term project to demonstrate their comprehension on 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):
Generalized Fourier series, Fourier transform, sampling theory Hilbert transform, linear modulation (AM, dsb, ssb), angle modulation (FM, PM), pulse modulation, multiplexing, probability and random variables, random process and noise, signal-to-noise ratios, noise in modulation system.

E0531 Communication Systems (3/0):
In the design of a communication system, the system designer works with mathematical models which 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 through the Fourier series and transform that we could study them in the frequency domain. With this principle, we are able to get more insight to the characteristics of channel and learn how various modulation technologies work for a particular channel.

E0632 Introduction to Microprocessor (0/3):
This course offers a study of software and hardware architectures of the INTEL microprocessors, including software architectures under the protected mode, advanced assembly language programs, memory interface, I/O interface, interruption and direct memory access. Prerequisite: Computer Engineering Applications I or the INTEL 8086-family 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.

E0671 Computer Engineering Applications I (2/0): This course offers a study of the INTEL 8086-family assembly language programming, including an introduction to computer organization, addressing modes, various instructions and their applications, and program design and debugging. Prerequisite: Introduction to Computers.

E0671 Computer Engineering Applications II (0/2): This course offers a study of numerical analysis, including errors, polynomial interpolation, solution to nonlinear equations, numerical integration, numerical differentiation, numerical linear algebra, computations of matrix eigenvalues, and curve fitting.

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): Using CAD software to analyze and simulate electric circuits.

E0721 Electric Circuit Experiment (1/1): We teach the students to learn digital and analog circuit theory through the circuit internships in the course. We teach the students to use software tools and hardware instruments to measure the circuits in the course.

E0722 Circuits Theory (3/2): Electric circuit analysis to solve circuits in time, phaser, and frequency domain in conjunction with computer-aided analysis.

E0738 Practical Electronics (0/3): The concept of this course includes design of systems and circuits of wireline and wireless transmission systems. Students can deal with the related research and jobs after learning this course.

E0760 Digital Systems Design (2/0): Following on 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): (1) To learn how communication systems work; (2) To know the effect of noise. 3. To study wire and wireless communication system.

E0836 Introduction to VLSI (3/0): The current course introduces design principles and methodologies of the Vary 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, multiple-output networks.

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.

E1034 Basic Concepts of Computer Science (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 analyse 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 the more and 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):** Introduction to fuzzy set, fuzzy relation, fuzzy logic, fuzzy inference and its applications.

**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 Technology (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.

**E1561 Basic Electric (2/0):** This course covers basic electrical and electronic concepts, practical applications, and troubleshooting. Special emphasis is placed on basic circuit theories to equip students with knowledge for advanced subjects.

**E1562 Basic Electric Experiment (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 Experiment (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 device programmer. We will also use code generation tool and simulator. We will use explaining, discussing, actual operation, and thinking model on the leadership to strengthen students’ logic analysis and creative ability.

**E1565 Microprocessor Experiment (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 model on the leadership to strengthen students’ logic analysis and creative ability.

**E1568 Electronic Experiment (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.

**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 developed and widely adopted in tremendous applications. This course will introduce mathematical foundations and practical techniques for digital manipulation of images. Students will learn spatial and frequency image processing; segmentation; wavelets processing; color image processing and compression.

**E2067 Control System Design (0/2):** Modeling, design, numerical simulation verification. 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.

**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.

**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 system and the programming. To improve the 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.

**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 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.

**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 The Installation & Implementation of Wireless Sensor Network (0/2):** Wireless sensor network is composed of many wireless devices (Zigbee) formed, and each unit has all information collected from the environment, and the ability to communicate with each other.

**E2994 Introduction to Analogic (Integrated Circuit) Design (0/3):** The current course introduces advance circuit design principles of the microelectronics and analog circuits.

**E3073 Fiber-Optic Transmission Practices (0/2):** Because students might have no previous fiber optics experience, this course presents the fundamentals of several subjects on which the technology is based. These include fibers, optics, communications, fiber optic communications, and, finally, fiber optic test and measurement.
E3089 Logic and Digital Circuit Design (3/0): The course introduces the basic theorems and design methods for logic and digital systems. Students may learn the basic capability to apply the digital system design technology to engineering applications.

E3090 Graphical Programming Design (2/0): This course introduces the basic concept of LabVIEW for LEGO MINDSTORMS NXT. It will teach students 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 will learn about mechanical design, program design, motor control, and sensor detection.

E3091 Robotic Experiments (0/1): This course will introduce hardware and software designing. It explains the embedded system development process action plan. At first, we will introduce the key techniques of FPGA and SOPC, 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 will also be studied. And design the Verilog hardware circuit to receive sensor signals and control the motor.

E3121 Introduction to Electrical Engineering (2/0): This course provides an introduction to the key areas of electrical engineering; let freshmen recognize that the disciplines of electrical engineering originate from the application of the electric energy and/or the related messages/information carried. Generally, they involve the research and application of electricity, electronics and electromagnetism. This course will cover the 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 (0/2): This course introduces the basic concepts of the natural forces, the laws of motion. Students understand basic laws and are able to analyze and solve the problems.

E3128 RF Circuit Design (0/2): In contrast to the course of Circuitry, which is the basic to analyze/design a low-frequency electronic circuits, this course is a necessity to analyze/design a high frequency/RF electronic circuits. Analysis of RF circuits is rooted in the concept of voltage wave propagation, which is missing in the course of Circuitry. This course together with Circuitry provides comprehensive electronic circuit design principles.

E3228 Protocols for Mobile Communications (0/2): The purpose of this course let students learn various basic principles and correlation technique of action communication network. Such as WiFi, WCDMA, IEEE 802.16, LTE, LTE-A, etc.

E3396 Graphical Programming Laboratory (1/0): To build the basic concept of LabView, and learn how to use LabView solving the problems of electrical engineering applications.

E3411 Integration of Intelligent Mobile Devices and Robot Control System (0/3): Teaching 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 homework.

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): Introduce the basic concepts about the natural forces, the laws of motion. Understand Basic laws and be able to analyze and solve the problems.

S0337 Electromagnetic Waves (3/0): Maxwell’s equations, propagation of electromagnetic wave,
transmission line equations, characteristics of transmission lines, reflection and transmission coefficients, standing wave ratio, Smith chart, impedance matching, microstrips 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):** 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):** 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):** Introduction to 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):** Introduce mathematics and its application on electrical engineer. The content of this course contains of Logice and proffs, discrete structure, algorithm etc.

**T0141 Special Topics Lab. (1/0):** This course will lead students to get familiar with linux and java, learn the structure of the hadoop cloud system, and then utilize them to fulfill enormous data computation.

**Master’s Program in Electrical Engineering**

**E8280 Technical Writing (2/0):** Students learn 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.

**E0349 Computer Algorithms (0/3):** Computer algorithm is one of the most important topics for researchers in this field. This course will offer students solid background in algorithm designs and analytical skills.

**E0424 Advanced Engineering Mathematics (3):** Mathematical models, computer graphics, boundary-value problems and characteristic function representation, Sturm-Liouville eigenvalue problems, Rayleigh quotient, solution of partial differential equations of engineering science, nonhomogeneous problems, methods of eigen-function expansion, the Dirac delta function and its relationship to Green's function, Green's functions for ordinary differential equations, Green's functions for partial differential equations; Calculus of variations, the Euler-Lagrange Equation, Hamilton Principle, Application to problems from Continuum mechanics, the Rayleigh Ritz method.

**E0442 Advanced Computer Architecture (0/3):** This course introduces computer architecture. It first introduces students to the quantitative performance of a computer. The instruction set is described. Pipelining, memory-hierarchy design, storage systems, interconnection networks and multiprocessors are very important in the computer architecture, and they are introduced systematically. Students who take this course will gain basic knowledge on the modern computer.

**E0762 Digital Signal Processing (0/3):** This course introduces basic digital signal processing techniques for estimation and detection of signals in communication and radar systems. Topics include: Optimization of dynamic range, quantization, and state constraints; DFT, convolution, FFT, NTT, Winograd DFT, systolic array; spectral analysis-windowing, AR, and ARMA; system applications.
E0764 Digital Control (0/3): This course offers a general introduction to the following topics: digital control systems; time-domain and z-domain analysis; frequency domain analysis of digital control. Emphasis is placed on PID controller, phaselead and phase-lag controller. Dead best response design is also covered.

E0773 Pattern Recognition (0/3): Pattern recognition is concerned with the classification of objects into categories, especially by machine. Key techniques of statistical pattern recognition are first introduced. Then we will introduce how to apply neural networks in pattern recognition.

E0938 Optimal Control (0/3): It is usual to minimize the time of transit or a quadratic generalized energy functional or performance index, possible with some constraints on the allowed control. Pontryagin's maximum principle, which solved optimal control problems relying on the calculus of variation and Bellman’s dynamic programming to the optimal control, will be covered.

E1011 Digital Speech Processing (0/3): Topics 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.

E1015 Digital Filter Design (0/3): This course provides a broad introduction to the field of digital filter design and signal processing. Material includes concept of z-transform, state-space representation and structures. Also covered are Cascade and parallel form structures and implementation, IIR and FIR design principles.

E1060 Computer-Aided Simulation (0/3): This course employs various circuit analysis programs to analyze electric and electronic circuits for transient, DC, AC, and Fourier analysis. Also included is the printed-circuit-board layout.

E1063 Parallel Processing (0/3): This course offers a study of various parallel computer architectures. Topics include: interconnection networks; pipelining and super scalar techniques; multiprocessors and multicomputers; multi-vector and SIMD computers; scalable, multithreaded and data flow architectures; and parallel program.

E1093 Neural Network (0/2): 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.

E1185 VLSI Design (3/0): This course offers a description of the design methodology and MOS circuit concepts to the design of CMOS VLSI circuits. The overall emphasis is on the VLSI design concepts, environments and circuit optimizations. CMOS technology and devices are also shown.

E1185 Digital IC Design (0/3): This course discusses the design methodology and circuit concepts of high performance MOS/bipolar/biCMOS digital integrated circuits. The design optimizations and applications of various new digital integrated circuits are also described.

E1316 Coding Theory (0/3): Topics include: fundamental bounds of Shannon theory and their application; source and channel coding theorems; Galois field theory, algebraic error-correction codes; private and public-key cryptographic systems.

E1318 Digital Circuit Testing (0/3): This course introduces methods for efficiently testing very large scale IC (VLSI). Here, we first illustrate some common fault models. Based on the models, fault simulation and test (pattern) generation (TG) are introduced. Next, some advanced techniques—design for testability (DFT) and built-in self-test (BIST) are given in this course. Finally, some special topics such as memory testing, intelligent property (IP) testing and system-on-a-chip (SOC) testing are given.

E1370 Advanced Linear Systems (0/3): This course is intended as a one semester fundamental course in linear systems. It's a 3 credit-hour course for graduate students. The only prerequisite for this course is a course in ordinary differential equations. It's not necessary for students to have had a course
in linear systems, though it is perhaps helpful to have an understanding of the concept of the state of a system.

E1389 Intelligent Control (0/3): This course is an introduction to new aspects of self-learning control structure. 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 principle, design and analysis methodology of analog integrated circuits will be taught in this course. Students will have ability of design and analysis of analog integrated circuits after learning this course and can go into the relative researches and jobs.

E1391 Electromagnetic Theory (0/3): Topics include: Generalized Maxwell’s Equation, EM boundary value problem, Green’s function, eigenfunctions expansion techniques, Conservation of EM energy, EM radiation from simple sources, general EM field, Hertzian potentials, Dyadic Green functions.

E1392 Mobile Communication Systems (0/3): The purpose of this course is to initiate the mobile communication system. Technical concepts are presented in an order that is conducive to understanding general concepts, as well as those specific to particular cellular and personal communication systems and standards.

E1393 Knowledge Engineering (0/3): The aim of this course is to show how a neural network can serve as the knowledge base for an expert system.

E1394 Integrated Circuit Design for Communications (0/3): This course includes the topics: IC devices and modeling, processing and layout, current mirrors, noise analysis and modeling; Advanced current mirrors, comparator, sample and hold, voltage reference, switched capacitor circuits, D/A and A/D converter, Discrete and Continuous Filter Design, PLL circuit, and oversampling converter.

E1496 Fuzzy Control (0/3): This course covers the following topics: fuzzy sets; operations on fuzzy sets; fuzzy relation and extension principle; fuzzy logic and fuzzy inference; fuzzy systems and their properties; and fuzzy controller.

E1497 Speed and Position Control of Induction Motor (0/3): This course attempts to unify the treatment of vector control of induction motor drives by using the concepts of general flux orientation and the feed forward and feedback voltage and current vector control. The new concept of torque vector control is also introduced and applied to all ac motors.

E1624 High Speed Computer Networks (0/3): This course introduces the technologies of high-speed networks. Three main topics are covered in this course. The first part introduces the basic operations in traditional local area networks. The second part describes the operations of high-speed networks. The last part introduces the inter-networking technologies.

E1640 Scattering Theory of Electromagnetics (0/3): This course is designed to introduce the geometrical theory of diffraction (GTD) and the physical theory of diffraction (PTD). The GTD is an extension of the classical geometrical optics (GO), and it overcomes some of the limitations of geometrical optics by introducing a diffraction mechanism. The PDT extends physical optics to provide corrections that are due to diffraction at the edges of conducting surfaces.

E1737 Speech Processing (0/3): This course provides an introduction to the area of speech processing and processing and digital model of speech. The time domain method and spectral representation in speech processing is then introduced; and finally, the topic of linear coding is covered and a discussion is held on speech processing systems in the area of man-machine communication by voice.

E1742 Computer Controlled Systems (0/3): The purpose of this course is to present a control theory that is relevant to the analysis and design of a computer-controlled system, with an emphasis on basic concepts and ideas. The goal of the course is to provide students with basic knowledge on the design of computer-controlled systems.
E1746 Introduction to Statistical Communication (2/0): This course includes the following topics: detection theory, detection of signals in noise, estimation theory, estimation of waveforms, further topics in detection and estimation, application, miscellaneous applications, random variable, and simulation and reliability theory.

E1762 Digital Signal Processing (0/3): This course introduces the background of discrete time signal processing, including z. transform, difference equation and filter design. The main topics covered include discrete Fourier transform and its application as cepstral analysis and homomorphic signal processing.

E1787 Computer Network Security (0/3): Experts in network security are urgently required. The purpose of this course is to introduce the fundamental technique and standards of network security. Through this course, we aim to offer students instruction on basic skills and knowledge in this area.

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, DSK signalling schemes in AWGN environment, performance and power.

E2329 Mobile Communication System (0/3): This course covers the following topics: the mobile radio signal environment, statistical communications theory, path loss over flat terrain, path loss over hilly terrain and general methods of prediction, effects of system RF design on propagation, received-signal envelope characteristics, received-signal phase characteristics, modulation technology, diversity schemes, combining technology, signal processes, interference problems, signal-error analysis versus system performance, voice-quality analysis versus system performance.

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.

E2880 Introduction to System-on-Chip Design (3/0): This course covers modern system-on-chip (SOC) design methodology, system modeling and analysis, behavioral synthesis, design verification and test with emphasis on CMOS VLSI technology. Students will be given chances to carry out class projects based on their own interests.

E3133 OFDM Technologies (3/0): This course introduces the basic concept of OFDM in a wireless environment. Performance of OFDM in both AWGN and Rayleigh fading channels will be studied. Some implementation issues of OFDM systems such as channel coding, peak to average power ratio, and synchronization will also be discussed.


E3474 Introduction to The Design and Application of Intelligent Electronics (3/0): This course introduces the embedded system based on different robotic platform. The students will use FPGA to receive sensor data, control motor, and implement a project. The final project is an automatic robot.

E3315 Digital Watermarking Technology (3/0): Digital image can be easily and widely to distribute by the unlawful copy, which is serious to content owners. Digital watermarking technology is the insertion of a message into a cover media, and can be an excellent solution to protect it. This course will introduce spatial-domain watermarking method; frequency-domain method; robust watermarking method; fragile watermarking method; watermarking method based on vector quantization; Reversible digital image hiding; Image Authentication and Recovery.

E3489 System Design of 5g Mobile Communication System (3/0): Introduce the Fourth-Generation Mobile Communication SPEC and relative information, and introduce the Fifth-Generation Mobile Communication's future.
E3494 Antenna Principles and Engineering Applications (3/0): To have the students 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; Finally, there are various cases involving the engineering application of different antennas.

T1196 Scholastic Paper Study (1/1): This course will invite the professional scholars in the related areas of electrical engineer 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, recently, a platform and have chance to prompt the research experience exchange and fully discussion with each other.

E1651 Advanced High-Speed Networking (0/3): This course will train the students to be familiar with the techniques of the wireless data networks. It will further teach the students to understand the design methods and protocols of the WLAN.

E2389 Mobile Computing (0/3): This course introduce related issues of mobile computing. The main purpose will be getting students to learn about these issues and current possible solutions to these issues (establishing a strong professional background for further study).

E2590 Vlsi Testing And Design For Testability (0/3): Give a comprehensive guide to new DFT techniques that will show the students how to design a testable and quality product, drive down test cost, improve product quality and yield, and speed up time-to-market and test-to-volume.

E2807 Introduction To High Technology Patents (0/1): Students learn what patents and patent applications and statutory limits are. 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 creativity.

E2889 wireless Ad Hoc And Sensor Networks (0/3): This course will introduce the principle and related issues about wireless ad hoc networks and sensor networks. Through the discussion, students can know the relevant knowledge about wireless ad hoc networks and sensor networks.

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.

E2359 Application Of Robust Control (0/3): Perturbed system models; Norms for signals and systems; Robust Controller Designs; controller design on restricted frequency ranges; Matlab LMI Lab Tutorial.

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.

E2365 Personal And Wireless Communication Systems (0/3): To introduce the cellular concepts, propagation, path loss and system structures.

E2478 Planar Antennas (0/3): This course is to let the students learn the principles of radiation, formulas and basic properties of planar antennas. A variety of planar antenna structures will be introduced, which include rectangular and circular patch antenna. The students will also be made familiar with the characteristics of various antennas used in a variety of mobile devices operated under different protocols, such as GSM 900, DCS 1800, 3G, Bluetooth, WiFi/WLAN antenna, GPS antenna, etc. Finally, the students are asked to go through the antenna sample fabrication by use of laboratory equipment and supplies.
T8000 Thesis (0)

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E8280 Technical Writing (2/0): Students learn 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.

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.

E2730 Study of High Tech Patents (0/3): This course gives a brief introduction on how to obtain a patent, including patent searching, patent map, patent value and patent writing. Then the course provides the basic concepts to whoever invents or discovers any new and useful process, machine, manufacture or composition of matter.

E2890 Evolutionary Computation (3/0): This course offers a thorough introduction to evolutionary computing (EC), including genetic algorithms, evolutionary strategies, genetic programming, and several evolution-based optimization techniques. It is hoped that students can apply EC techniques to solve real-world engineering problems.

E2895 System Integrated Circuit Design (3/0): SoC is concerned with the 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.

E3022 Vehicular Network Communication and Application Technologies (3/0): The main goal of the course is to provide an in-depth understanding of the intelligent transportation systems. The ITS includes Global positioning systems, Weather information systems, Real-time traveller information, Traffic and transit management, Traffic signal systems, Incident management, Emergency management, Electronic toll collection and Commercial vehicle operations. We want the students to acquire skills and knowledge which would help them find jobs in this area as well as pursue further research.

E3023 Image Process and Hardware Accelerator Design (3/0): In this course, the architecture of DE2 platform is described first. The specs of LCD touch panel and CMOS sensor are introduced and explained using the Verilog codes. Then we will introduce how to apply FPGA to accelerate the image processing.

E3046 Next Generation Network Management Technologies (3/0): This course provides an introduction to Next Generation Network (NGN), including the protocol architecture of IMS, QoS, Security, Accounting and FMC. We will investigate these topics in this course and want the students to acquire skills and knowledge.

E2401 Engineering Optimization (3/0): The course introduces the fundamental theorem of optimum design methods. Students may learn the basic capability to study the topic of engineering optimization.

E2676 Principles and Applications of Optical Fibers (3/0): This course is divided into three parts. Part 1 attempts to put 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.


E3476 Mechanism Design and Manufacturing Workshop (3/0): In this course we introduce various mechanical mechanisms, and their comparisons, discuss various methods for generating mechanisms, introduce mechanical drawing of spatial mechanisms, as well as machining of mechanical elements.

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E3477 Design of Servomotor Control (3/0): The main purpose of this course is to let the students learn the motor drivers included stepping motor, DC motor and AC motor; then, designing a controller for the motor drivers.

E3478 Application Practice of Robot Manipulators (3/0): The course will use world-renowned company KUKA robot manipulator as training materials. The course will introduce the knowledge and practical aspects of the robot applications, the course is divided into three parts: The use of (1) the robot manipulator and calibration methods, (2) write tips robot manipulator program, (3) dismantling the robot manipulator exercises. Course objectives is to enable students gain practical experience and obtain genuine license KUKA robot manipulator.

E3492 Seminars on Applied Intelligent Robotic Systems (3/0): Collaborating professors and corporate lecturers from the Departments of Electrical Engineering, Information and Library Science, and Information and Communication, provide students with robotics HW/SW, information services, and artistic design knowledge to complete a term project.

T1196 Scholastic Paper Study (1/0): This course will invite the professional scholars in the related areas of electrical engineer 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 defense their thesis, recently, a platform and have a chance to prompt research experience exchange and full discussion with each other.

T1196 Scholastic Paper Study (0/1): This course will invite second year graduate students and the professional scholars of electrical engineering to come to give a lecture or speech. They will introduce and direct the popular topic. And students will discuss in class.

E2807 Introduction to High Technology Patents (0/1): Students learn what patents and patent applications and statutory limits are. Through the simulation of the course and practical writing, students understand the importance of the patent obtained and how to protect the key technologies and creativity.

E2886 Robotics (0/3): This course will teach students the theories and design concepts of the robotics. The course includes lecture, simulation and implementation. The concepts and the theories are taught via the lecture. We will explore 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.

E2891 Sensors and Their Circuit Design (0/3): Classification sensing applications, physical quantities and the conversion of electrical quantities, safety considerations of the sensing element and its application analysis and design, displacement sensing element and its application analysis and design, the angle sensing elements and its application analysis and design, image distance measurement and its application changes.

E2987 System Prototyping and Hw/Sw Co-Design (0/3): As ARM-based embedded system is combined with FPGA prototyping techniques. The course aims to porting the Embedded Linux, GUI and drivers, hardware/software co-design, as well as the design experience for various I/O applications. Projects include IDCT/MC architecture design for MPEG-2 Decoder.

E3025 Embedded Hardware Accelerator Design (0/3): The current course introduces a digital circuits with FPGA chip and uses a DE2 multimedia board as an embedded platform. In the first half of the semester, we introduce the DE2 platform and the principles of CMOS digital cameras and controller design. And next, we introduce the hardware and software co-design method for hardware accelerator of imaging recognition in the other half of the semester.

E3182 Estimation Theory and Applications (0/3): This course introduces the fundamental theories of system parameter and system state estimation methods. Students learn the basic capability to study the topic of system identification and state estimation.
E3185  The Development of Mobile-Phone Applications (0/3): In this course, we introduce the development platforms of Window Mobile, iPhone and Android. Besides, the mobile-phone programming and related researches are also studied in this course.

E3260  Principles and Applications of Optical Sensing (0/3): This course shows how lightwaves achieve the goal of optical sensing. Optical sensors work in a variety of ways, sometimes just using optical fibers or free space to deliver light, other times monitoring changes induced in light transmission caused by external effects. Optical 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.

E3435  Micro-Sensors and Sensing Circuits Design (0/3): This course includes operating principles of micro-sensors and design of sensing circuits. The sensing circuits include bio-medical signals sensing circuits.

T8000 Thesis (0)

Ph.D. Program

E0773  Pattern Recognition (3/0): This course provides basic concepts related to patents, to help students understand legal questions and security in the area of product development. These days, a number of countries have implemented patent and license systems. Many foreign buyers ask local factories or sellers to verify a products’ legitimacy to avoid incurring lawsuits and other legal action.

E1093  Neural Network (0/3): This course introduces the application of neural network 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.

E1391  Electromagnetic Theory (0/3): Topics include: Generalized Maxwell’s equation, EM boundary value problem, Green’s function, eigenfunctions expansion techniques, Conservation of EM energy, EM radiation from simple sources, general EM field, Hertzian potentials, Dyadic Green functions.

E1659  VLSI Technology (0/3): In this course we will study the principles and design of VLSI circuits. The content of this course is composed of four parts: the principles of CMOS circuits, the structures of VLSI circuits, the architecture of VLSI Systems, and VLSI design methodology. In additional to the circuits and systems, we will also cover some CAD tools for the design of VLSI circuits, such as Verilog for simulation and Cadence OPUS Design System for schematic entry, symbolic layout, polygon layout, module generation, design rule checking, and system integration.

E1738  Broadband ISDN (3/0): This course covers the following topics: introduction to ATM, transfer modes, ATM standards, broadband ATM switching, impact of ATM on terminals and services, ATM LAN layer, traffic control in ATM networks, strategies for ATM.

E1739  Fault-Tolerant System Design (3/0): This course covers the design and analysis of fault-tolerant systems, including the survey of fault-tolerant computer architectures and some case studies. Experimental analyses of computer system dependability, reliability estimation, system diagnosis and fault-tolerant software are also covered.

E1740  Adaptive Control (3/0): This course introduces graduate students to the state-of-the-art design methods of adaptive control, and their limitations. Topics include: parametric models, and parameter identifiers and algorithms such as SPR-Lyapunov, gradient, least-squares, persistence of excitation, adaptive observers, as well as the certainty equivalence principle, model reference adaptive control, and indirect adaptive controls such as pole placement, polynomial approach, LQR. It also covers Robustification such as parameter drift, leakage, projection, dead-zone, dynamic normalization, and adaptive nonlinear control: tuning functions and modular design, extremum seeking.

E1741  Image Analysis (0/3): Image analyses deal with the processing and analysis of images. We
first introduce basic image processing techniques and then techniques suitable for image analysis will be fully discussed.

**E1743 High Speed Optic Networks (0/3):** This course covers the following topics: light sources, optical fibers, light detection noise in optical communications, incoherent detection, TDMA, WDMA, SCM, photonic switching, direct modulation, DFB laser, external modulation, coherent detection, optical amplifier, optical fiber soliton transmission.

**E1744 Digital Circuits Testing and Diagnosis (3/0):** This course covers the basic concept of the testing of digital circuits and systems. Fault modeling and logic simulation are introduced first. Fault modeling is the fundamental subject of this course; therefore, we concentrate on this topic. Testing for single stuck faults is another important topic of this course. The ATG, such as D-algorithm, 9-V, PODEM, and FAN, is described. The students who take this course will learn how to generate the test patterns of a digital circuit.

**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 will present the basic principles of adaptation and cover various adaptive signal processing algorithms (e.g., the LMS algorithm) and many applications, such as adaptive noise cancellation, interference canceling, system identification, etc.

**E1850 Analog Circuit Design (0/3):** This course provides tutorial information on custom CMOS (complimentary metal oxide semiconductor) analog circuit design. Emphasis is placed on the practical implementation of analog CMOS integrated circuits (ICs). An electrical or computer engineering background with fundamental knowledge in the area of MOSFET operation, linear circuits, and engineering electronics is required.

**E1851 Paper Writing Technique (3/0):** 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 combing these objectives, the teacher can expect both enthusiasm and effective learning.

**E2062 Digital TV Technology (3/0):** Digital Television (DTV) has different meanings depending on whether you're discussing production and post-production or distribution and transmission. For production and post-production, it means using digital production tools such as cameras, VTRs, switchers, disk recorders, CGs, etc. In distribution and transmission, it means sending the audio and video digitally to its destination.

**E2073 Microwelectronics (3/0):** Topics include: (1) VLSI Technology, (2) Operational/Wideband Amplifiers, (3) Active Filters, (4) Sample-and-hold Circuits, (5) DAC/ADC Converters, (6) Distortion in Amplifiers and Its Reduction, (7) Mixers/Multipliers/VGA/Phase Detectors, and (8) Signal Generators.

**E2077 The Third Generation Wireless Communication System (3/0):** The wireless communication landscape is changing dramatically, driven by the rapid growth in the Internet information services and by the appearance of new multimedia applications. The emerging 3rd-generation cellular networks will soon support data rates from 64 kb/s (vehicle speeds) to 384 kb/s (walking), and eventually up to 2 Mb/s (stationary, hot-spot cells), which allow a variety of high-speed mobile data and multimedia services.

**E2088 Wavelet Theory (3/0):** This course describes the fundamentals of wavelet as well as its applications. These applications include image data compressing signal processing and communication application.

**E2227 Soft Computing (0/3):** Soft computing differs from conventional (hard) computing in the aspect that, unlike hard computing, it is tolerant of imprecision, uncertainty and partial truth. In effect, the role model for soft computing is the human mind. The guiding principle of soft computing is exploitation of the tolerance for imprecision, uncertainty and partial truth to achieve tractability, robustness and low solution cost.
**E2325 Fractal Image (3/0):** The most popular “fractal-based” algorithms for both the representation as well as the compression of computer images have involved some implementation of the method of Iterated Function Systems (IFS) on complete metric spaces, e.g. IFS with probabilities (IFSP), Iterated Fuzzy Set Systems (IFZS), Fractal Transforms (FT), the Bath Fractal Transform (BFT) and IFS with grey-level maps (IFSM). (FT and BFT are special cases of IFSM.) The “IFS component” of these methods is a set of N contraction maps \( \{w_1, w_2, ..., w_N\} \), \( w_i : X \to X \), over a complete metric space \((X,d)\), the “base space” which represents the computer screen.

**E2331 Wireless Communication Systems (3/0):** The objective of the course is to enable participants to obtain a thorough understanding of simulation-based design and analysis of wireless communication systems, sufficient to prepare them for developing or improving their own simulations, or to be able to evaluate the capabilities of commercially available packages.

**E2337 Special Topics in Digital Signal Processing (3/0):** DSP has been a research topic in the Department of Electronic and Electrical Engineering since 1973. The principal research areas are DSP for data communications, speech and image processing, and biomedical signal processing. The approach adopted by the group is to strike a balance between directed fundamental research and applied research.

**E2382 Digital Intellectual Property (3/0):** DIP is playing a more and more important role in the SOC era. The objective of this course is to introduce how to design a successful IP core so as to be easily integrated into an SOC design, specially, including the test strategies for such protected IP cores.

**E2442 Special Topics on Image Processing (3/0):** The principal goal of this course is to provide an advanced introduction to the applications of special topics on image processing methods. The 3-D modeling and face detecting will be introduced.

**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. It will be focused on the key topics of 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.

**E0795 Linear Systems (3/0):** 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.

**E2381 Broadband Computer Networks (3/0):** This course will train the students to be familiar with the techniques of the mobile data networks. It will further teach the students to understand the design methods and protocols of the 3GPP LTE.

**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. Then, based on digital signal processing, it illustrates the voice processing technologies, including speech coding, enhancement, synthesis, recognition.

**E3030 Parallel and Distributed Processing (3/0):** This course offers a study of parallel and distributed processing and meanwhile applies such processing on cloud computing systems. It can help students get 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.

**E1185 VLSI Design (0/3):** The current course introduces design principles and methodologies of the Vary Large Scale Integrated Circuits (VLSI).

**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 instructed as well.

**E2882 Ultra Wideband Communication Systems (0/3):** The current course introduces the followings:
(1) Smart Antenna; (2) Code Division Multiple Access; (3) Orthogonal Frequency Division Multiplexing; (4) Ultra Wideband; (5) Multi-Input Multi-Output.

**E2883 Design Of Control Integrated Circuits For Optical Communicat (0/3):** This course introduces five types of broadband circuits: transimpedance amplifiers, limiting amplifiers, automatic gain control (AGC) amplifiers, laser drivers, and modulator drivers. Some background information about optical fiber, photodetectors, lasers, and modulators is provided to elucidate the system environment in which these circuits operate. A summary of receiver theory is given at the outset to streamline the discussion of the receiver circuits in the later chapters.

**E3138 Topics On Robotics (0/3):** This course will introduce the theory and the techniques of the robot localization and navigation problems. At first, we will introduce the problem of robot navigation, then we will explain the various positioning methods. We also compare various national and international associated research. The pedagogy of this course will use explaining, simulations, verbal reports, and thinking model on the leadership to strengthen students' expertise and implementation techniques.

**T8000 Thesis (0)**
DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING

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

Chairman: Hsu, Hui-Huang (許輝煌)

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 27 full-time faculty members and 43 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 2013, there were about 925 students in the Department, along with 159 Master’s students and 41 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 has been instituted. One of the perspectives of our department is to admit international graduate students, under 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
Chao, Louis R.Y. (趙榮耀)

Professors
Hsu, Hui-Huang (許輝煌); Chiang, Rui-Dong (蔣瑞東); Keh, Huan-Chao (葛煥昭); Kuo, Chin-Hwa (郭經華); Chang, Chih-Yung (張志勇); Wang, Ying-Hong (王英宏); Shih, Kuei-Ping (石貴平); Lin, Hwei-Jen (林慧珍); Horng, Wen-Bing (洪文彬); Hwang, Ren-Junn (黃
Associate Professors
Shyu, Yuh-Huei (徐郁輝); Wang, Bal (汪柏); Chen, Po-Zung (陳伯榮); Chung, Hsing-Tai (鍾興臺); Yen, Shwu-Huey (顏淑惠); Hwang, Lain-Jinn (黃連進); Chen, Chien-Chang (陳建彰); Chen, Jui-Fa (陳瑞發); Cheng, Chien-Fu (鄭建富); Chen, Chun-Hao (陳俊豪)

Assistant Professors
Tsai, Yi-Chia (蔡憶佳); Lin, Chi-Yi (林其誼); Pan, Meng-Shiuan (潘孟銘); Tu, Ching-Ting (凃瀞珽); Chang, Shih-Hao (張世豪); Chen, Yi-Cheng (陳以錚)

Degree Requirements

The Department of Computer Science and Information Engineering offers the programs at the undergraduate and graduate levels.

1. Requirements for a degree of Bachelor of Science in Computer Science & Information Engineering:
Completion of 139 credits of courses, including 97 credits of required courses (including 31 credits of General Education), 27 credits of elective professional courses, and 15 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.

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.

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.

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 (2/2): 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, concurrence, 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.

E0747 Language Structures (2/2): This course introduces various programming language concepts, including syntax, semantics, scope, storage management, parameter passing methods, type checking and inference, data abstraction, polymorphism, exception handling, and so on. The four programming languages—paradigms-imperative, object-oriented, functional, and logic—are also introduced.

E0761 Digital Systems (3/0) and Lab (1/0): Fundamental concepts of digital system 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.

E0768 Numerical Methods (3/0): First, errors in computing will be introduced. Then problems involving solutions of single nonlinear equations and system of linear equations will be discussed. Interpolation is also an important topic, as well as numerical integration, numerical differentiations and solving the differential equations. We will be sure to talk about a key issue in data analysis: least square approximation.

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 (2/2):** 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):** 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.

### Elective Courses

**E0524 Introduction to Software Engineering (3/0):** This course introduces techniques to specify, design, test, and document medium and large software systems. Design Techniques include: structured programming, defensive programming, program design language (PDL), and program complexity models; path testing, test methods and the construction of test data; software reliability models; introduction to software tools and management techniques. Student team projects are required as term projects.

**E1050 Automata Theory (3/0):** This course introduces abstract models of digital computers, programming languages, and related matters. Students will learn the foundations and basic principles of computer science.

**E2110 Introduction to Wireless Networks (3/0):** This course introduces the technology and underlying principles of wireless networks, such as AMPS (Advanced Mobile Phone System), GSM (Global System for Mobile communications), wireless LAN, wireless PAN (Personal Area Network), and MANET (Mobile ad hoc Network).

**M0517 Statistics (0/3):** Limit theorem, law of large numbers, and some probability distributions will be reviewed. Estimation of the parameters, including point estimation and interval estimation, will be discussed. Hypotheses are tested for means and variances. Regression and analysis of variances are very popular methods in statistical analyses.

**M0821 Introduction to Multimedia (3/0):** This course introduces the basic concepts of multimedia. Multimedia processing technologies are specially emphasized, covering speech, image, and video compression schemes. Students are able to appreciate the power of digital multimedia. Meanwhile, this course is designed to build the fundamental concepts so that students are able to design multimedia systems.
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 upon demand.

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

E0175 Operating System (3/0): In this course, we will study the theories, techniques, and instance of the operating system. They include process management, memory management, file and I/O management, network management, security management.

E0644 Database (3/0): Topics include: Object-oriented data modeling, object SQL, physical object management; Logical-based data modeling, logic foundation of database. A database management system design and implementation project is required.

E0790 Compilers (3/0): This course introduces UNIX's utility tools: Lex and Yacc, top-down and bottom-up parsing techniques in addition to attributed grammars. Also covered in the course are: Intermediate code, front end and back end code optimizations; Dataflow analysis, code generators, concepts of compiler, parallel compiling technique.

Elective Courses

There are many elective courses, including multiple professional courses of 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.

English Master’s Program in Computer Science and Information Engineering

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 upon demand.

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 (4): By selecting a good topic for graduate student's research and transforming an idea to
Elective Courses
There are many elective courses, including multiple professional courses of 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, Computer Vision, and so on.

Master’s Program in Networking and Multimedia

Required Courses

E3394 Networking and Communication (3/0): In this course, we will focus on key technologies of computer communication systems and relevant security issues. Students will be able to know how 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 upon demand.

T8000 Thesis (4): 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

D0035 University Education and Instruction (0/2): This course is made up of five parts. First, to explore the development and change of idea and spirit of a university; second, to understand recent development trends and reform directions in the higher education of advanced countries; third, to probe some problems, strategies and perspectives of higher education in Taiwan; fourth, to inquire about the impact of a knowledge-based economy on higher education and its challenges; and finally, to enhance the overall quality competitiveness of higher education.

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 presentation and paper.

T8000 Thesis (6): 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
DEPARTMENT OF AEROSPACE ENGINEERING

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

Chairman: Tang, Jing-min (湯敬民)

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 22 faculty and staff, 500 undergraduate students and 63 graduate students in the Department. Today, there are more than 2,000 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 143 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 28 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
Feng, Chao-kang (馮朝剛)

Professors
Chen, Ching-hsiang (陳慶祥); Chen, Tzeng-yuan (陳增源); Ing, Yi-shyong (應宜雄);
Ma, Der-ming (馬德明); Niu, Yang-Yao (牛仰堯); Tyan, Feng (田豐)

Associate Professors
Chang, Yeong-kang (張永康); Chen, Pu-woei (陳步偉); Lee, Shi-min (李世鳴);
Tang, Jing-min (湯敬民); Wan, Tung (宛同); Wang, Yi-ren (王怡仁);
Shiau, Jaw-kuen (蕭照焜); Hsiao, Fu-yuen (蕭富元)

Degree Requirements

1. Requirements for a degree of B.S. in Aerospace Engineering:
   Completion of 143 credits of courses, including 100 credits of required courses and 28 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:
   Advanced Engineering Mathematics, Seminar I, Seminar II.

Course Descriptions

Undergraduate Courses

E0031 Engineering Graphics (0/1): The goal of this course is to study the language of engineering
graphics so that students can write it clearly for those familiar with it and read it readily when written by another. Therefore, students must know the basic theory and be familiar with its accepted conventions and abbreviations.

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 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 its material, the power plant, navigation system, and airworthiness.

E0404 Aircraft Materials (0/2): Since aluminium 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. This 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, 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 the aircraft's 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 electromechanics, 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.

**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 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 (0/3): 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. Material 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 \(\frac{W}{S}\), lift-to-drag ratio \(\frac{L}{D}\), thrust-to-weight ratio \(\frac{T}{W}\) 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 (0/2): 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 en 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 aeroplanes 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 (0/1)**: 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 aeronautic 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 homeworks 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.

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systems. This course begins with an introduction of thermodynamics, including energy, energy transfer, general energy analysis, properties of substances, energy analysis of close 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 close 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 NAFCO, 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, grammars and sentences to be used in technical documentation of civil aviation repairs and maintenance on site 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.

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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 (3/0): Topics include: kinematics of motion, particle dynamics, Lagrange’s equations; rigid body dynamics, including Euler’s equations, the Poinsof 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 (3/0):** 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 Kuhn-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 (3/0):** 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 (3/0):** 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 (3/0):** 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 (0/3):** 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 (0/3):** 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 (0/3):** 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, advance 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, sound emission.

**E1631 Theory for Experimental Measurements (0/3):** This course introduces basic concepts, data analysis, flow visualization, hot wire system, laser Doppler velocimetry, image processing computer graphics.

**E1632 Viscous Fluid Flow (0/3):** 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.

**E1634 Mechanics of Composite Material (0/3):** Course content includes: fibers, matrices and fabrications, behaviors of unidirectional composites, short fiber composites, analysis of an orthotopic lamina, analysis of laminated composites, and advanced topics of composites.

**E1725 Structure Statics (0/3):** 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, isoparametric formulation of bar element, isoparametric 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 and 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, Liapunov’s methods, describing functions, Popov and circle criteria, contraction mappings, exact linearization, variable structure, simulation.

**E1940 Estimation and Control (0/3):** 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 (3/0):** 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 (3/0):** 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.

E3366 Special Topic in Numerical Method on Compressible Flow (3/0): 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.

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.

T0095 Seminar (I) (0/1): This course involves a two-hour class every one to two weeks. The class invites senior members from industry, research institutes or universities to give presentations on developments and future directions in their own fields. We also invite graduates from our department who have rich work experience to give talks about their own working fields and communicate with the students after the talk.

T0096 Seminar (II) (1/0): This course invites professional speakers to deliver talks on a range of related areas. Students who take this course are also required to give talks on their research topics.

T8000 Thesis (0/0)
COLLEGE OF
BUSINESS AND MANAGEMENT
COLLEGE OF BUSINESS AND MANAGEMENT

Dean: Chiu, Chien-Liang (邱建良)

Brief History

An amalgamation of the originally separate colleges of business and management, the College of Business and Management was established in 2012. Currently, it consists of twelve departments: Business Administration, Accounting, Statistics, Information Management, Transportation Management, Public Administration, Management Sciences, Banking and Finance, International Business, Industrial Economics, Economics, and Insurance. In addition, it also offers a pioneering E-learning EMBA program. After continuous development, the TKU College of Business and Management is now the largest business college in Taiwan, with more than 10,800 students and 245 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. 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. With this as a legacy, the College of Business and Management offers doctoral programs, English MBA programs, nine EMBA programs, and several cross-discipline programs subsidized by the Ministry of Education. Furthermore, the College has partnership agreements with the University of Michigan-Flint and the University of Queensland for co-master’s programs, which enable students to obtain master’s degrees from both universities upon completion of their studies. Furthermore, the “International Journal of Information and Management Sciences,” an EI and TSSCI 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. Since 1995, the college has actively held joint academic conferences and short-term overseas study programs with TKU’s partner universities around the world. 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 some 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.

Motto and Goals

In addition to cultivating high-quality young talents with business and managerial skills, the College encourages cultural depth and global views and is committed to developing a world-class business and management school.

Future Development

The College of Business and Management has seven goals for its future development: (1) To provide 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; (7) To equip students with professional knowledge and skills by providing a practical-oriented curriculum.
Course Descriptions

Undergraduate Courses

A1019  Travel and Tourism Management (2/0): This course provides students with theoretical and practical knowledge in the tourism and travel industry. It discusses basic concepts in the field of tourism demand analysis, tourism supply analysis, travel agency operation, hospitality, and recreation planning. The operational and practical issues in the travel agency, international hotel, theme park, international tourism marketing, and airline travel marketing are also discussed.

A1636 Interpersonal Relationship & Communication (3/0): The purpose of this course is to show you how you can become more effective in your work and personal life through a knowledge of and skill in human relations.

B0154  Financial Statement Analysis (0/2): This course introduces the objectives of financial statements and equips students with the tools and techniques needed to make decisions about investment and finance. The main areas of emphasis include analysis of short-term liquidity, capital structure and long-term solvency, return on investment and asset utilization, results of operation, and comprehensive analysis of financial statements.

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 Seminar on Theory 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 (0/3): 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.

B1415 Professional English for Finance and Insurance (0/2): This course is designed to broaden students' English vocabulary in finance, business and insurance, with a focus on the financial market, financial institutions, and economic analysis. In each class, students are provided with articles taken from major international newspapers or magazines. Each article will be reviewed for vocabulary, grammar, language structure, and coherence.

B1416 Corporate Governance in Banking and Insurance (0/3): This course introduces the concept of corporate governance. It covers regulatory devices, boards of directors, supervisors, audit committees, information disclosure, board compensation, and business ethics. It also focuses on the framework and implementation of corporate governance in Taiwan and the general principles provided by the Organization for Economic Co-operation and Development (OECD), especially global efforts in reforming and setting new standards in finance and banking industries.

B1427 Finance and Entrepreneurship (0/2): In this course, we will invite financial experts and entrepreneurs to deliver speeches and share their experiences. Through these speeches, students will become familiar with the practical aspects of and opportunities available in industry, as well as how to apply their knowledge in practice.

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 the ancient Greek philosophy, the economic ethics evolved since the 19th century British enlightenment age as well as the introduction of Adam Smith’s famous writings. Three separated parts of the economic sectors are noted following the introduction session, namely the household, the business firms and the government, focusing on the contemporary ethics issues within the related sections of the economy.
B1549 Applied English (3/0): This class is a three credit elective course in Applied English. The first semester is devoted to developing basic skills of listening, reading, writing, and speaking. There is no text, only a set of weekly readings on current and interesting social issues, as well as worksheets, all of which are available on my website. The class is very interactive and multimedia oriented. The lectures and testing are all in English. Our goal is to improve our English skills and be able to demonstrate this in a test setting.

B1595 International Business Management Financial Statement Analysis (2/0): This course tries to train the students to gain insight from the financial analysis of international corporations. The course focus on firms’ strategy and competition specially, supply chain management, and important customer analysis.

M0013 Personnel Management (2/0): This course introduces a comprehensive set of managerial activities and tasks concerned with developing and maintaining a qualified workforce/human resource in ways that contribute to organizational effectiveness, including human resource planning and job analysis, recruiting, training, development, performance management and compensating and rewarding the workforce.

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 method to complete specific goals.

M0560 Small and Medium Size Enterprise Management (3/0): Based on creative and interactive teaching methods, the instructor would like to share nearly two decades of business experience in different industries, such as the attitude needed for an entrepreneur, business plan to start up, business model, along with the actual operation, marketing strategy, finance, crisis management, etc. All the challenges of the business will be included. I hope classmates have the courage and ambition to innovate a new business after taking this course.

M0800 Business Ethics (2/0): 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.

M0898 Entrepreneurial Management (0/2): This course attempts to bridge the old and new economies with a proven strategic and tactical formula for entrepreneurial success. This course offers quantitative and qualitative knowledge, concepts, approaches, strategies, tactics, and philosophy to increase the entrepreneur’s probability of success and reduce the risk of failure.

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.

M1741 Overview of Rapid Transit System Engineering (3/0): This is an introduction to the Rapid 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.

M1742 Project Management of Public Construction Engineering (0/3): This course introduces subjects such as public construction, project management, modern civil construction organization, schedule and cost of public works, management theory, and manpower utilization. The course will also consist of in-class case studies.

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 can gain expertise 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.

M2004 Innovative Marketing of Transportation Service Industries (0/3): The purpose of this
course is to introduce innovative marketing strategies used in transportation service industries. In the
first half-semester, major marketing topics of these industries are examined. Marketing innovation of
transportation services are discussed through case studies. Besides an introduction to innovative
marketing know-how, this course also equips students with the ability to better market themselves in
the future.

M2060 Innovation and Entrepreneurship Management (0/3): 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 called “brainstorming.”

M2161 Accounting Certification Exam Preparation (III) (3/0): The main purpose of this course is
to help students obtain CPA licenses. This course covers the core content and CPA tests in cost
accounting and management accounting. The instructor will explain CPA tests in a detailed way. The
student should be able to successfully obtain CPA professional licenses in the future.

M2204 Comprehensive Financial Management Planning (2/0): Students 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.

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

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.

B1512 Topics in Securities Market Adminstration (2/0): At first we present the Taiwan, Mainland
and Hong Kong securities market structure and the securities industry business management practices;
then we will illustrate the financial supervision and corporate governance practices in the operation of
the case, in order to further explore the future development of Taiwan’s securities industry.

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 in 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.

E2751 Secure Electronic Commerce (0/3): 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 society will also be discussed.

M0747 Strategic Management (0/3): This course covers discussions on the development of organizational competitive advantages and its strategic implications.

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 environment.

M0801 Seminar in Human Resource Management (0/3): This course introduces human resource management functions, including attracting, training and maintaining talent. And it helps students learn the method to increase human capital for an organization. From reading and evaluating paper, we can help students to write their own paper.

M1090 Analysis of Financial Reports (3/0): Financial statements are the basis for a wide range of business analyses. This course introduces and develops a framework for business analysis and valuation using financial statement data. We then show how this framework can be applied to a variety of business analyses and valuation contexts. The purpose of this course is to provide such a framework for business students and practitioners.

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.

M1628 Advanced Knowledge Management (0/3): This course introduces current research and approaches to knowledge management, key concepts in knowledge management, drivers of knowledge management, knowledge management technologies, knowledge management enablers, knowledge management roles and organizational structure, knowledge management lexicon, and reasons for failure or success in knowledge management.

M1702 Information Law (2/0): This course provides a discussion on information acts and regulations such as copyright law, patent law, trademark law, law for the prevention of unfair competition, intellectual property, criminal law, and personal data in data protection law, etc.

M1719 Practical Training of Information Security Equipments (0/2): This is a practice course for information security technology. Students are required to install, set up, and configure security services from Internet open sources. Topics include, but are not limited to, the following: traffic monitoring, DNS services, routers, NAT servers, firewalls, system logs and recovery, access control and authentication (IEEE 802.1x) and mail spam gateways, in order to understand how to deal with them and what can be done regarding various information security issues.

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.

M2189 Internship Program in Enterprises Informatization (0/4): This course is co-opened by Data System Inc. and Business and Management College, teaching the implementation practices of Enterprise Resource Planning Systems.

EMBA Master’s Program

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.
M1611 Special Topics on Management (3/0): The contents of this course is 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 the students who are not the business and management background), but be used as the common managements and thinking logic in the class. The multi-methods will be used in this course include lecture, presentation, discussion, and written report.

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.
DEPARTMENT OF INTERNATIONAL BUSINESS

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

Chairman: Tsai, Jeng-yan (蔡政言)

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 enrollments 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 enrollments 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.
Faculty

Professors
Lin, Joung-Yol (林炯垚); Lin, Yi-nan (林宜男); Lin, Jyh-horng (林志鴻);

Associate Professors
Chang, Chun-hui (張俊惠); Chia, Chao-nan (賈昭南); Lai, Chin-chang (賴錦璋);
Lee, You-kong (李又剛); Lin, Chiang-feng (林江峰); Liu, Chu-mei (劉菊梅);
Tsai, Jeng-yan (蔡政言); Tseng, Yi-ming (曾義明); Pao, Shih-heng (鲍世亨);
Hsieh, Chih-jou (謝志柔)

Assistant Professors
Chan, Sheng-hsiung (張勝雄); Ho, I-fang (何怡芳); Huang, Je-sheng (黃哲盛);
Lin, Mei-rong (林美榮); Liu, Yi-cheng (劉一成); Sun, Chia-Chi (孫嘉祈);
Tseng, Chun-hui (曾忠蕙)

Lecturers
Chan, Shiou-jung (詹秀蓉); Tseng, Hsiu-mei (曾秀美)

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 138 credits, including 96 credits of required courses and 20 credits of elective courses offered by the department.

2. Requirements for the degree English Instructed Bachelor in International Business:
Completion of 128 credits, including 85 credits of required courses and 19 credits of elective courses offered by the department. (All the courses, except some general education courses, are lectured in English.)

3. Requirements for a Master’s degree in Business Administration (MBA):
Completion of 42 credits, including 18 credits of required courses and 24 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 39 credits, including 18 credits of required courses and 15 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 39 credits, including 18 credits of required courses and 15 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 (3/0): 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.

B0061 Marketing (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 (0/3): 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 materials 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.

**B0325 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 (2/2):** 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 (0/3):** This course provides an integration of materials taught in the courses General Management, Marketing, Financial Management, and Investment Decision Making in International Business.

**B0591 Investment (0/3):** This course comprises four components: first, describing theories related to the exchange rate and the International Asset Pricing model; second, discussing financial tools used in international investment, such as stocks, bonds, derivatives and alternative investments (funds and real estate); third, introducing analytical methods and applications related to exchange rates and returns; finally, explaining global performance evaluation and the global investment process.

**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.

**B0800 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.

**B0806 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 instruments, 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 Taiwan 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 (0/3): 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 (0/3): 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 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.

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.

B1257 International Financial Risk Management (0/2): This course first introduces the risks of international transactions stemming from changes to exchange rates. It then introduces hedging instruments of foreign exchange and principles of hedging. Finally, the transactions of foreign exchange risks of a multinational firm are examined in a systematic way.
B1390 Cross Cultural Communication (0/2): The key to effective cross-cultural communication is knowledge. However, it is essential that students who join this class understand the potential problems of cross-cultural communication, and make a conscious effort to overcome these problems.

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 System (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.

M0463 Business Statistics (3/3): 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.
S0325 Calculus (3/0): In this period of rapidly-developing economy and business, mathematics is a very important instrument. Calculus is often the only means of truly understanding changes to international economics. In this course we will introduce concepts related to the derivative, the integration, and their mutual applications.

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.

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.

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.

B0124 Economics (3/0): The primary objective of this course is to offer a graduate-level introduction to econometric theory and practice. More specifically, upon completion of this course, students will be able to comprehend most of the applied econometrics found in scholarly journals and initiate applied econometric analysis within their own research program.

B0136 Consumer Behavior (0/3): This course develops conceptual models for realizing the behavior of consumers; students can list the internal and external factors that explain and predict consumer behavior.

B0191 International Business Management (3/0): Course content includes a review of the impact of international business, the scope of business internationalization, environmental constraints, regional issues, functional operations, strategic planning, human resources, social and ethical issues, marketing, production, and financial issues.

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.

B0219 International Trade Theory and Policy (3/0): This course covers the law of comparative advantage, the Heckscher-Ohlin model, alternative trade theory and empirical testing, growth and trade, the theory of tariff and non-tariff trade barriers, the theory and policy of economic integration, economic development, and international factor movements.

B0236 International Economics (3/0): The purpose of this course is to lead the learners to understand how the world economy works. Materials covered are microeconomic and macroeconomic aspects of an open economy as well as the world economy. The first part deals with the concept of comparative
advantage principles, the trade policies of a nation, the local and global cooperation programs and the factors movements. The second part consists of a brief introduction of the foreign exchange market, the historical evolutions of the international monetary architectures and an introduction of the open economy macroeconomics.

M1137 Management Research (3/0): This course introduces how to design the process of management research and how to collect data. Through training, students will be able to clearly define questions related to management. This course will help students deal with management questions in a correct and efficient manner.

B0499 Fair Trade Law (3/0): The purpose of Fair Trade Law, which is the so-called economic constitution, is to maintain a fair competitive market, and deal with activities impeding competition, such as monopolies, mergers, concerted actions, and other restraints on competition or unfair trade practices. This course describes how the FTC (Fair Trade Commission) investigates and deals with cases involving Fair Trade Law.

B0591 International Investment (0/3): This course focuses on international financial markets, from exchange risk to international portfolio diversification. Concepts and theories will be presented with a focus on their practical relevance.

B0609 International Financial Instruments (3/0): Topics of this course include: introduction of basic investment theory; advantage of international investment, how to compile stock price average and/or stock price index; and various kinds of financial instruments, for example, stock, foreign exchange, mutual fund futures and stock price index futures.

B0672 International Financial Market (3/0): 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.

B0693 Seminar on Marketing (0/3): This course guides students in researching famous articles in academic journals; through discussion and debate, theoretical explanations can be developed.

B0814 International 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.

B0824 Enterprise in Global Economy (3/0): This course emphasizes the global-environmental factors in an enterprise’s decision-making process, since those factors are crucial in the increasingly changing international market.

B0921 International Business Laws (0/3): This course presents basic concepts and principles of International business law. Students will learn about the structure as well as the different types of international business contracts.

B1067 New Trends of International and Techworld (0/3): In terms of international financial markets, we will analyze austerity plans, financial tsunamis, debt crisis, financial crisis, subprime mortgages and financial regulations. The course will emphasize cheap revolution, cloud computing, tablet RFID, OLED, virtualization, green technology, electric cars and stem cells.

B1123 Mergers and Acquisition (3/0): Mergers, takeovers, restructuring, and corporate control issues have become central public and corporate policy issues. Some powerful forces have been unleashed. Business enterprises find that they must adjust to massive changes in their environments and in the nature of competition as well as in their relations with suppliers, workers, consumers, and other
stakeholders. The M&A subjects, therefore, take on even greater importance and will be discussed in this course.

B1124 International Business and Change Management (3/0): The purpose of the course is to equip students of management with the core concepts, framework, and techniques of strategic management that will allow them to make better decisions both for themselves and companies. To achieve outstanding success, the tasks of international business management are to identify sources of superior business performance and to formulate and implement strategies that exploit these sources of superior performance globally.

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.

B1494 Organizational Behavior of International Business (3/0): This course introduces the application of OB in the field of IB. Individual OB, Group OB and influence of OB in an organization will be among the discussion topics.

B1495 Financial Institution and Investment (3/0): This course covers two different but related issues on financial institution management and international investment, which are crucial to global business management. Students are required to have a strong theoretical background and will have opportunities to share their work and benefit from their participation in the class.

M1951 Business to Business Marketing (0/3): Business Marketing is different from consumer marketing. Business marketing is a specialized market. The purchasing motivation and buying processes are based on professional decisions.

M0399 Managerial Economics (0/3): This course provides economic foundations in management. Topics covered include economic optimization, risk analysis, demand analysis, production and cost analysis, market structure analysis, and practice of product pricing.

T 8000 Thesis (0)
DEPARTMENT OF BANKING AND FINANCE

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

Chairman: Lee, Ming-chih (李命志)

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, facilitate professional growth, and increase managerial ability. It will broaden their knowledge and understanding in the areas of economics, finance, banking, monetary policy, and investment analysis.

Faculty

Professors
Chiou, Jong-rong (邱忠榮); Lin, William T. (林建祥); Chiu, Chien-liang (邱健良);
Huang, Ho-chuan (黃河泉); Nieh, Chien-chung (謝宗佑); Shiau, Fung-shyung (蕭峯雄);
Lee, Ming-chih (李命志); Wang, Mei-hui (王美惠); Lee, Wo-chiang (李沃牆)

Associate Professors
Chen, Yu-lung (陳玉瓏); Hsu, Ching-chih (徐靖志); Ku, Kuang-ping (顧廣平);
Duan, Chang-wen (段昌文); Cheng, Wan-hsiu (鄭婉秀); Lin, Yun-yung (林允永);
Lin, Chien-chih (林建志)

Assistant Professors
Lu, Cheung-sum (路祥琛); Yang, Sue-chin (楊斯琴); Wang, Ren-he (王仁和);
Chen, Hung-kun (陳鴻崑); Hsieh, Tsung-yu (謝宗佑); Lu, I-Ting (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 138 credits of courses, including 96 credits of required courses and 42 credits of elective business and finance courses.

2. Requirements for an Executive Master’s degree in Business Administration (EMBA):
Completion of 39 credits of courses, including 20 credits of required courses and 19 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 41 credits of courses, including 31 credits of required courses and 10 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 30 credits of courses, including 21 credits of required courses and 15 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.

**B0455 Futures Market (3/0):** This course focuses on issues related to futures markets. Topics include pricing, hedging, speculating using commodity, stock index, and interest rate futures contracts.

**B0459 Options Market (0/3):** This course covers the fundamental knowledge of option as a trading vehicle, the option markets, option trading strategies, option pricing models, and Greek sensitivity of option.

**B0512 Bond Market And Investments (2/0):** The objective of this course is to provide coverage of the products and analytical techniques for valuing bonds and quantifying their exposure to changes in interest rates, as well as portfolio strategies for satisfying a client’s needs.

**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.

M0264 Time Series (2/0): This course combines both theoretical and empirical applications with the intention to teach students how to collect financial data and employ the newly developed econometrics methodologies to fully investigate and analyze the dynamic relationships among real world variables. Basic econometrics concepts and computer operating skills are the prerequisites.

M0271 Financial Management (2/2): 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.

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 rim, 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 determinant 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 the 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 behaviour models, the Black-Scholes Model, numerical procedures, extensions 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 So Low Growth Model, the Ramsey-Cass-Koopmans Model, the 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 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 (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 Advance 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 INSURANCE

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

Chairman: Miao, Jerry C. Y. (繆震宇)

The Department
With the rapid rise of the economy and general living standards, insurance has become an important instrument in family finance and business management. To train students for future careers in this field, the Department of Insurance and Banking was established in 1965. In 1973, the insurance program was transformed into the Department of Insurance – the first in Taiwan. Two years later, the evening school of the department was established. In 1991, one more class was added to the evening school to meet the growing demand of the insurance market. Subsequently, in 1997, the evening school became a part of the regular daytime program in order to conform to revisions made to the college act. Since then, three classes of students have enrolled in the program every academic year. The Master’s Program in Insurance Management was established in 2000, and the Executive MBA (EMBA) in 2001. The purpose of this program is to incorporate the resources of government, industry, and university to enhance the overall level of research.

Our program features four primary characteristics. First, all department faculty possess both academic training and practical work experience. Secondly, the courses are designed to emphasize both theoretical and practical topics, including overseas research and study exchanges, as well as speeches and discussions. Thirdly, the department recruits internationally renowned insurance scholars to help broaden students’ perspectives. Finally, the department encourages students to get professional licenses that are helpful to their future careers.

Our future development goals are as follows: first, our future focus will be finance-oriented. In order to adapt to the changing economic environment, we will place particular emphasis on the field of international insurance and financial insurance. Also, we intend to collaborate closely with government agencies and related institutions to obtain even more government or industry-based projects. Finally, we hope to embark on academic exchange programs with foreign universities and to encourage our faculty and graduate students to participate in insurance conferences held in Mainland China.

Faculty

Professors
Hu, Yi-jen (胡宜仁); Liao, Shuh-yuan (廖述源); Miao, Jerry C. Y. (繆震宇);
Wang, Chi-ling (汪琪玲)

Associate Professors
Hao, Chung-jen (郝充仁); Kao, Tong-liang (高棟梁); Lai, Yao-shyan (賴曜賢);
Tien, Jyun-ji (田峻吉); Tang, Hui-wen (湯惠雯)

Assistant Professors
Tsen, Miao-huei (曾妙慧); HoChia-Ling (何佳玲); Chen Ying-Erh (陳映而)

Lecturer
Wu, Yueh-lung (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 142 credits of courses, including 99 credits of required courses and 43 credits of elective insurance courses.

2. Requirements for an Executive Master’s degree in Business Administration (EMBA):
Completion of 36 credits, including 15 credits of required courses and 21 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 36 credits of courses, including 13 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.

Course Descriptions

Undergraduate Courses

**B0001 Life Insurance (2/2):** This course covers product analysis of the contract; organization, management, and regulation of life insurance companies, reinsurance law, and problems with life insurance in the ROC.

**B0017 Fire Insurance (2/0):** This course offers an introduction to property insurance, characteristics of fire insurance, analysis of fire insurance policy, fire rate and premium, endorsements of allied perils, extra clauses, and business interruption 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 (0/2):** 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 Investment (3/0):** This course introduces fundamental principles of investing. We will talk about Taiwan’s stock market, global stock markets, modern portfolio theory, CAPM, fundamental analysis, technical analysis, and derivatives. Every student will be expected to be a good listener and questioner. A final report and two exams are required in this course.

**B1464 Insurance Marketing (0/2):** This course introduces the types of marketing systems, channels of distribution in insurance, marketing strategies, and products of life insurance and no-life insurance for sales.

**B1402 Insurance Law (3/0):** Topics of this course include the nature of law, insurance interest agents and brokers, remedies, waiver and estoppels, rescission, reformation, warranties misrepresentation and concealment subrogation.

**B0102 Insurance Accounting (3/0):** This course covers individual transactions, assets, liabilities, capital, surplus, policy reserve liability, and summary financial statements.

**B0109 Insurance (2/2):** Topics of this course include risk and risk management, insurance contract principles, insurance organizations, insurance marketing, insurance pricing, life and casualty insurance.

**B0126 Risk Management (2/0):** This course covers basic definitions of risk, degree of risk, peril, hazard, loss, objectives and processes of risk management, methods of risk handling, risk control, risk financing, risk analysis, life, property and liability exposures.

**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.

**B0167 Health Insurance (0/2):** This course offers an introduction to: private and government health and accident insurance, product development, product underwriting, pricing and marketing, and practical issues and regulations.
B1403 Annuity Insurance (2/2): This course covers the development of pension and annuity insurance, elements and principles, individual annuity, business pension program, national pension system, and international pension system comparison.

B1404 Life Insurance Mathematics (3/3): 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.

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.

B0261 Liability Insurance (0/2): This course covers liability insurance policies, general liability programs, professional liability forms, personal liability forms, recent developments in liability insurance, workers’ compensation, and historical development of workers’ compensation insurance policies.

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.

B1463 Casualty Insurance (0/2): This course covers the following topics: nature and scope of casualty insurance, crime insurance, engineering insurance, aviation insurance, fidelity and surety bonds, credit insurance and credit card insurance.

B0075 Social Insurance (3/3): This course offers a definition of social insurance, field and functions of social insurance, the real meaning of social security, social security and national planning, and comparison of social welfare programs in various countries.

B0575 Property Insurance Company Operations (2/0): This course covers the following topics: insurance market dynamics; management organization; functions of operation: marketing, production, pricing, underwriting, reinsurance, loss adjustment; investment practices, statutory insurance accounting requirements; analysis of financial statements; loss prevention research by insurers.

B0576 Personal Insurance Company Operations (0/2): This course covers basic theories and practices for personal insurance management, current status and future development of personal insurance in Taiwan, personal insurance finances, personal insurance organizational operation, personal insurance supervision and management, and personal insurance contracts and regulations.

B0617 Product Design for Property Liability (0/2): This course discusses how to: re-evaluate old policies, understand marketplace and risk management, prepare business for action, be aware of insurance coverage options, motivate insurance people, and effective negotiation tactics.

B0663 Export Insurance (0/2): This course deals with the risk of international trade, the character and operation of export insurance, export insurance in the U.K., export and import insurance in Japan, export insurance in the R.O.C. and the development of export insurance.

B0418 Employee Benefits (2/0): This course introduces the meaning of employee benefits, explains the significance of employee benefits in terms of both employer cost and benefits provided to employees, identifies the factors that have influenced the growth of group insurance, and explains the significance of each factor. It covers social insurance plans, group life insurance, group disability income insurance, group medical expense insurance, and retirement plans.

B1500 Long-Term and Insurance (2/0): For many students, long-term care is synonymous with nursing homes. The clientele are defined on the basis of disability, both young and old. Thus the policy contest, its nature and purpose, and care service will be discussed in this course.

B0988 Special Topics in Risk Management and Insurance (0/3): This course covers special topics for synthetic analysis, mainly focusing on current events or newly approved regulations or laws.

B1240 Financial Management (3/0): Topics of this course include yield rates, amortization schedules
and sinking funds, bonds and other securities, more advanced financial analysis and some practical applications.

**B1241 Practice of Asset Liability Management for Insurance Company (0/3):** This course covers several important topics: Asset Liability Management (ALM) for insurance companies including balance sheets; Risk Based Capital (RBC); and asset liability management for life and property-liability insurers.

**B1362 The Analysis of Insurance Economics (2/0):** This course is designed to familiarize students with the basic concepts of economics which are applied to the field of insurance. The organization of this course includes five parts: risk, risk aversion, and expected utility; insurance demand; insurance supply and pricing; the organization of the insurance industry; and asymmetric information problems in the insurance market.

**B1502 Investment-Oriented Insurance Products (3/0):** This course provides students with basic knowledge of investment-linked insurance policies, including the characteristics of such policies, product design, regulatory reform and related issues between agents and policy-owners. The course also aims to enable students to learn about the investment tools, the expertise of portfolio management and personal finance associated with the policy.

**M0271 Financial Management (3/0):** This course helps to bridge the gap between theory and practice in the field of traditional financial management.

**M0339 Accounting (3/3):** 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.

**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.

**B0302 Economics (3/3):** For first part of “Principles of Economics,” 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.

**B1467 Applied Statistics For Insurance (2/0):** Discussing the applications of statistics, the contents will cover R package, exploratory data analysis, single population, two population, statistical modelling, regression, analysis of variance, multiple regression, time series.

**M0003 Human Resources Management (2/0):** This course analyzes the role of employees in the management from the resourced-view. Students also learn how the goals of organization can be achieved by the Human Resource planning and developing.

**B0155 The Mathematics of finance (0/2):** 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.

**B0630 Casualty Actuarial Science (2/2):** The purpose of this course is to introduce a series of Non-
Life insurance actuarial sciences, including basic principles and methods of rate-making, pricing of insurance, theory of legal reserves, and other related topics to do with non-life insurance actuarial science.

**M0399 Managerial Economics (3/0):** This course aims to train students’ eye for economic phenomena. We will use examples of problem solving and explanations to draw students’ attention to important economic issues. From basic rational choice model to behavioral economics, students will be introduced to various economic models. We will also explore essential questions, such as the motive behind human behaviour.

**B0608 Case Studies on Insurance (2/0):** This course defines insurance through discussions and practice of case studies.

**B1089 New Financial Instrument (2/0):** The purpose of this course is to provide fundamental concepts relating to characteristics and history of financial innovative products. Our course will focus on financial derivatives developed in the insurance field including longevity bonds, longevity SWAP, catastrophe bonds and catastrophe options.

**B1469 China Insurance Market and System (2/0):** This course provides an overview and context of the Chinese insurance market and examines the Chinese market in comparison with other developing insurance markets.

**B1470 Integrated Risk Management (2/0):** This course reviews the concepts of risk and risk management first. It then focuses on how to identify, assess, measure and manage risks. Students will develop and implement appropriate risk management strategies through case studies and presentations.

**E1034 Introduction to Computers (2/0):** This course covers topics such as e-commerce, computer viruses and information security. Students will be equipped with skills that enable them to further investigate more advanced techniques or applications in these fields. Students will also be taught how to apply these abilities and skills to their daily life.

**M0405 Management (3/0):** 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.

**B1503 Ethics in Insurance (2/0):** The development of moral ethics is an essential requirement for anyone considering entering the insurance profession. This course provides students with a foundation of professional ethics that can be applied in the workplace.

**B0210 International Trade (0/3):** This course consists of two parts: the first introduces the classical trade model and trade theories under imperfect market competition; the second part discusses tariffs, quotas as well as other measurements that affect trade flows between countries. Finally, the importance of and trends in international economic cooperation are introduced and discussed.

**B0629 Insurance Regulation and Supervision (0/3):** In this course, the topic of “insurance supervision” will be divided into four parts, including: general supervision; supervisory functions and powers; solvency; and market conduct with regard to IAIS/ICP (2011).

**B1439 Special Topics on Insurance Operations (0/2):** This is a study on a series of insurance operations, including insurance markets, rate-making, product design, marketing, underwriting, reinsurance, claim adjusting, investment, and other related topics to do with insurance operations.

**B1471 Practicum in Insurance Industry (0/2):** This course involves an eight-week practical internship program at an insurance organization, including life, non-life and broker or agent companies. Students may select to either partake in office work or field work.

**Master’s Program**

**B0127 Risk Management Special Project (0/3):** This course is designed for master’s students to understand the contemporary developments in techniques of risk management and how these
techniques are used to identify, analyze and manage risks in business. The course includes not only elements of traditional pure risk management, but also topics of modern financial risk management.

**B0263 Money and Banking (3/0):** This course covers the nature and functions of money and finance, commercial banking, central banking, monetary theory, and international monetary relations.

**B0575 Property Insurance Company Operations (0/3):** Course topics include: insurance market analysis; organization management; marketing systems; underwriting policy; reinsurance placing; loss adjustment; accounting requirements; analysis of financial statements; loss prevention and risk management to insurers.

**B0576 Personal Insurance Company Operations (0/2):** This course presents questions and discussions on personal insurance operating, personal insurance organizations’ operating problems; research and discussion on personal insurance finances, analysis of operating strategies, and general discussions on personal insurance operating.

**B0629 Insurance Regulations and Supervisions (3/0):** This course describes the IAIS core principle, open markets, market conduct, solvency, and RBC.

**B0631 Financial Management of Insurance (3/0):** This course offers an introduction to financial management; risk management; derivative markets for insurers; security insurance risk; risk based capital; value at risk.

**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.

**B0797 Advanced Study in Transportation Insurance (0/2):** This course teaches students about the conditions of B/L (Hague Rules, Hague-Visby Rules, Hamburg Rules), provides an analysis of Institute Cargo Clauses and Institute Hull Clauses, and highlights the key differences between English and American Marine Insurance laws.

**B0798 Advanced Study in Fire Insurance (2/0):** This course presents principles of insurable interest, utmost good faith, indemnity, contribution, subrogation, and proximate cause applied in fire insurance; analysis of homeowners policies, and practice and theory of business interruption insurance.

**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.

**B0800 Advanced Study in Life Insurance (0/2):** This course includes five parts: (1) A study in u-linked life insurance products; (2) The impact of entering the WTO on the Taiwan life insurance market; (3) Article 107 of life insurance law; (4) A study in moral hazards in life and health insurance; and (5) Life insurance investment management.

**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.

**B0830 Advanced Study in Social Insurance (0/3):** The principles and concepts discussed in this course include pension insurance, health insurance, unemployment insurance, employment injury insurance, finance and current social insurance schemes.

**B0831 Comparative Study on the Laws and Regulations of Insurance (2/0):** This course offers comparative studies of our current insurance law with those of the U.S., U.K., Japan, Germany and France. By way of comparison, we will discuss trends for amending the law.

**B0882 International Risk and Insurance (0/2):** The purpose of this course is to encourage students
to reflect thoughtfully about the effects of change on risk and its management in an international context. This course emphasizes: the political, legal, physical and technological environments worldwide; insurance and risk management in an international setting; and the future environment for international risk and 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 and bank assurance, etc.

**B0987 Advanced Study in Property and Liability Insurance (0/3):** This course covers analysis and discussion on property and liability insurance policies, including fire, automobile, marine, inland trade, aviation, liability, guarantee, and other property insurance.

**B1005 Managing Pension Plan (3/0):** Topics of this course include: an introduction to DB and DC plans; choosing the best pension plan; establishing pension investment policy; the asset allocation decision; setting the strategic asset allocation; measuring the investment performance of pension funds; improving pension fund investment performance; measuring pension fund risk; risk management strategies using derivative securities; managing managers and the costs of investing; recent development in pension management.

**B1157 The Guidance of Insurance Professional License (2/0):** This course introduces more than ten examinations for the insurance industry, including the life agency, the property agency, underwriting and claims, Financial Planning Personnel, actuary, FSA, LOMA, CFP, CFA, and so on. After passing the examinations and meeting certain requirements, students can obtain professional licenses that will allow them to work in the insurance industry. Speakers who have already acquired these licenses will be invited to introduce the examination in each class. The speaker will describe various aspects of the examination, such as how to prepare for and pass the examination and thereby successfully start your career. Every student will be expected to be a good listener and questioner. A final report and a final exam are required in this course.

**B1232 Advanced Study in Annuity Insurance (2/0):** This course covers the development of the pension market, Defined Benefit (DB), Defined Contribution (DC), Employee Stock Ownership Plan (ESOP), stock bonus plan, tax-sheltered annuity, individual retirement account, 401 (K) plan, and market-value annuity.

**B1233 Practice of Asset Liability Management for Insurance Company (0/3):** This course covers several important topics in Asset Liability Management (ALM) for insurance companies, including balance sheets; Risk Based Capital (RBC); asset liability management for life and property-liability insurers.

**B1361 Advance Study on Insurance Economics (3/0):** This course is designed to offer graduate students an overview of current research with reference to the main contributions in different fields. The course includes five parts: insurance theories without information problems; the theory of asymmetrical information; the empirical study of asymmetric information; risk management and insurance pricing; and the industrial organization of the insurance market.

**B1381 Study on Insurance Statistics (3/0)** This course focuses on the analysis of quantitative data in insurance research and introduces (1) data collection, conversion and analysis, and (2) descriptive statistics, correlation analysis, data tests and regression analysis. By the end of the course, students should be able to (1) articulate different analytical approaches for a particular quantitative study, (2) write a simple program to analyze data using a Statistics Analysis System (SAS), and (3) finish an analytical paper.

**B1388 Seminar on European-American Financial Market Law (0/2):** This course introduces finance and insurance laws and regulations in Europe and America, including those implemented by globalized corporate governments, financial markets, Basel Accords, and international finance supervision.

**B1408 Special Topics on Product Design of Insurance (0/2):** This course introduces the principles and requirements of product design in the insurance industry. Students are then able to select subjects of their choice and put these theories into practice. Student projects will be supervised by the instructor.
B1491 Actuarial Mathematics (0/3): This course is intended to introduce a broader perspective on actuarial studies. First, survival models and life tables are integrated into a new framework. Then, net premiums and reserves are put into a broader context. Finally, population and pension funding theories are analyzed in order to meet the needs of the elder generation.

S0425 Quantitative Methods (2/0): The main purpose of this course is to introduce the concept of quantitative methodology. To begin with, we will go through some important topics related to quantity, for example: the matrix, statistics, ordinary least square (OLS) and weight least square (WLS), etc. Then, we will introduce quantity software such as SAS and Matlab. After completing this course, students are expected to have the ability to deal with quantitative problems when writing their dissertations.

T0081 Research Methodology (0/3): Topics covered in this course include: an introduction to research; computer technology and research; research processes; experimental designs; data collection methods; sampling; data analysis and interpretation; and research reports.
DEPARTMENT OF INDUSTRIAL ECONOMICS

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

Chairman: Lin, Chun-hung (林俊宏)

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 basic knowledge in 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
Mai, Chao-cheng (麥朝成); Hsu, Song-ken (許松根); Hu, Ming-wen (胡名雯);
Lin, Chun-hung (林俊宏)

Associate Professors
Tsai, Ching-ting (蔡進丁); Chen, Yi-heng (陳宜亨); Hu, Teng-yuan (胡登淵);
Hung, Hsiao-wen (洪小文); Lee, Shun-fa (李順發); Lin, Pei-chien (林佩蒨)

Assistant Professors
Hung, Ming-feng (洪鳴丰); Chie, Bin-tzong (池秉聰); Kao, Kuo-feng (高國峯)

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 136 credits of courses, including 95 credits of required courses and 15 credits of elective industrial economics courses.

2. Requirements for a Master’s degree in Industrial Economics:
   Completion of 34 credits of courses, including 23 credits of required courses and 11 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 34 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 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 lecture 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 to provide concrete examples of their application rather than to attempt to provide an encyclopedia of terminology and anecdote.

B0301 Introduction to Mathematical Economics (2/2): 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.

B0481 Business Management (2/2): 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 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 lecture 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 (2/2): This course provides various fundamental concepts on corporate finance to develop the applications of corporate financial planning. The topics include the knowledge of financial statements, short-term and long-term planning of corporate financial structure, interest rate, corporate bond and stock. 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**

**B0253 Industrial Economics (3/0):** This course aims to teach students the theoretical concepts of industrial economics, and to develop the students’ ability to do the reaches. This course includes the following contents: Theoretical Background, Market Structure and Organization, Technology Innovation and so on.

**B0373 Intermediate Macroeconomics (3/0):** This course discusses various issues in macroeconomics, specifically focusing on long run economic growth, short run fluctuation, consumption and investment. Theoretical models and empirical works related to these issues will be introduced in the classroom and a term paper is required for students to complete the work.

**B0475 Regulatory Economics (0/3):** Theoretical industrial organization is a central element of the culture of microeconomics. This course attempts to give a straightforward account of the following topics: Monopoly, price discrimination, information and strategic behavior, and noncooperative game.

**B0531 Microeconomics (I) (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 details as well. It also provides a brief introduction to game theory, welfare economics, public economics, labor economics, and health economics.

**B0532 Microeconomics (II) (0/3):** Microeconomics II provides complementary topics of Microeconomics I. In-depth treatments include market structure, market failure, uncertainty and information, intertemporal and spatial analyses, other behaviors of the firm, and the theory of factor markets.
B0534 Econometrics (I) (2/0): The aim of this course is to introduce the regression model and interpret the parameters, random sampling, describes the data, the assumption on the explanatory variables. The course includes Chapter 1 through 8, which cover the basics of simple and multiple regression for cross-sectional data. Moreover, EViews is introduced to solve the empirical exercises.

B0535 Econometrics (II) (0/3): The aim of this course is to introduce the Time-Series Econometric models. The course includes Chapter 1 through 8. Moreover, EViews is introduced to solve the empirical exercises.

B0632 Theory of Value (I) (3/0): This course aims at providing the first-year graduate students with comprehensive economic theories of firm and consumer. The related mathematical tools are provided in details as well. It also provides brief introduction to game theory, welfare economics, public economics, labor economics, and health economics.

B0633 Theory of Value (II) (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?

B0634 Industrial Organization (I) (3/0): According to Oliver E. Williamson, “industrial economics is alive and well and is the queen of applied microeconomics.” In this course, industrial organization will be brought to bear with “how productive activities are brought into harmony with the demand for goods and services through some organizing mechanism, and how variations and imperfections in the organizing mechanism affect the success achieved in satisfying an economy’s wants” (Scherer and Ross).

B0635 Industrial Organization (II) (0/3): Based on the theory of game, this course will analyse firms’ strategic behaviors in the different market structures.

B0720 Fiscal and Monetary Policy (3/0): This course is to explore 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.

S0426 Quantitative Analysis (II) (0/3): Introducing advanced econometrics concepts and empirical analyses, including 2SLS, non-linear limited dependent variable models and simultaneous equation. Furthermore, various time series models are also discussed in this course.

B1555 Seminar (I) (0/1): The goal of the class is to inspire the students in their future researches. Scholars in different fields of economics will be invited to give the talk. Through the lectures and discussion, the students can find what they are interested in and gain some ideas about their research topics.

S0677 Quantitative Analysis (I) (2/0): Introducing advanced econometrics concepts and empirical analyses, including Multiple regression, Dummy variable, Heteroskedasticity, Pannel data, 2SLS and Simultaneous equation. Furthermore, Limited dependent variable models are also discussed in this course.

T0993 Seminar (II) (1/0): The objective of this class is to invite economic scholars to give a speech. The issues they talk about contain every field of economics.

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 you 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 economic theories and their applications, to promote the students to have the ability to engage in research. This course includes the following issues: Price discrimination, Quality Model, Technology Innovation and Licensing, International Trade, and so on.

**B0984 Advanced Industrial Economics (II) (0/3):** Advanced Industrial Economics (II) is the second part of the advanced IO course for Ph.D. and well prepared Master students. It is designed to furthering graduate students' knowledge about recent topics and methods of the field of IO. The students enrolled are supposed to have already been familiar with basic IO concepts.

**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.
DEPARTMENT OF ECONOMICS

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

Chairman: Cheng, Tun-kung (鄭東光)

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 94 credits of required courses, along with 42 elective credits, in order to graduate. From 2007 on, we also provide 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 fulfill 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. In 2004, the name “The Graduate Institute of Economics” was changed to “the Graduate Institute of Economics.”

Faculty

Professors
Chuang, Shi-feng (莊希豊); Liao, Huei-chu (廖惠珠); Chiang, Li-ly (江莉莉); Lin, Shu-chin (林淑琴); Chen, Jhy-hwa (陳智華); Wan, Jer-yuh (萬哲鈺)

Associate Professors
Chen, Chao-liang (陳昭良); Chen, Yah-wei (陳亞為); Cheng, Tun-kung (鄭東光); Lin, Chin-yuan (林金源); Yang, Biing-shiun (楊秉訓); Lin, Yi-chen (林亦珍); Chen, Yi-yi (陳怡宜); Edwards, Ronald A. (艾德榮); Tsai, Ming-fang (蔡明芳); Lin, Yen-ling (林彥伶)

Assistant Professors
Chen, Po-lu (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 136 credits of courses, including 94 credits of required courses and 20 credits of elective economics courses.

2. Requirements for a Master’s in Economics:
   Completion of 34 credits of courses, including 22 credits of required courses and 12 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 (3/3):** 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 on 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 Chinese History of 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 (3/0): 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.

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 about 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.

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.

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, signalling, and search theory. In particular, it focuses on the introduction of classic literature of wide applications.
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.

B0946 Applied Macroeconometrics (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.

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 help students understand the multi ethical obligations of businesses toward stakeholders inclusive 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.

**B0932 Energy Policy and Management (3/0):** Focusing on the new trend of international energy development, this course analyze the problem of each traditional energy: oil, coal, gas, electricity and renewable energy. While, several hot issues of energy policy, energy and environment, and the climate change resulted from the more fossil energy use are also arranged in the final part.

**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.
DEPARTMENT OF BUSINESS ADMINISTRATION

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

Chairman: Wu, Kun-shan (吳坤山)

The Department

The Department of Business Administration currently has four programs, including a bachelor program, a master’s program, a doctoral program, and an EMBA program. For now the BBA requires at least 140 credit hours, and each student must have a grade-point average of at least 2.00 for each course. The bachelor program started in 1966, the master’s program in 2001, and the EMBA program in 2003.

The purpose of the bachelor program is to provide students with a broad background in general business and management, and to give them adequate preparation for pursuing graduate study, entering the job markets, including banking, management, marketing, human resources, sales, purchasing, information management and manufacturing in business and industry, and also 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 as lecturers and mentors provide students opportunity to improve their skills for greater contributions to the businesses where they are employed.

Faculty

There are 22 full-time faculty members in the Department, 21 of who have a Ph.D. degree. In the future we will continuously strive to hire excellent faculty and enhance our performance in teaching and research.

Professors

Wang, Chu-ching (王居卿); Wu, Kun-shan (吳坤山); Yang, Li-Ren (楊立人)

Associate Professors

Huang, Man-chin (黃曼琴); Hung, Ying-cheng (洪英正); Lee, Ya-ting (李雅婷);
Lee, Yueh-hua (李月華); Lo, Hui-chiu (羅惠璆); Pai, Di-ching (白滌清);
Shen, Chang-mao (沈景茂); Zhao, Mu-fen (趙慕芬); Lee, Ching-fen (李青芬);
Lee, Wen-Shiung (李文雄); Wang, Mei-Ling (汪美伶); Chang, Wei-Lun (張瑋倫);
Wen, Hsing-yin (文馨瑩); Lee, Yun-Huei (李芸蕙); Chang, Ching-Hsun (張敬珣)

Assistant Professors

Ho, Giin-Tarng (何錦堂); Chang, Yong-Sheng (張燁昇); Chen, Chi-Hsiang (陳基祥);
Tu, Min-Fen (涂敏芬)

Degree Requirements

The Department of Business Administration right now offers three programs:

1. Requirements for a Bachelor in Business Administration:
   Completion of 140 credits of courses, including 93 credits of required courses and 25 credits of elective management courses is required.

2. Requirements for a Master’s degree in Business Administration:
   Completion of 37 credits of courses, including 19 credits of required courses, is required. Meanwhile there are 4 credits of thesis writing that are not included in graduation credits. Students are also

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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:
Completion of 39 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

**A0582 Business English Conversation (0/2):** The purpose of this course is to identify the characteristics of a speech and an oral presentation, explaining ways to organize a speech and an oral presentation, and analyzing techniques for handling audience questions.

**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.

**A0942 Japanese Style Management (0/3):** This course provides opportunities for students to understand Japanese managerial behavior from the perspectives of history, geography, culture and society. Emphasis is on the study of norm shaping and managerial applications.

**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.

**B0136 Consumer Behavior (3/0):** 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 (0/2):** 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 (3/0):** This course examines company laws, check laws and related business laws.

**B0191 International Business Management (0/3):** This course presents a general overview of the international business scene, focusing particularly on the major environmental factors, the problems, and the prospects of managing multinational business operations.

**B0196 International Marketing Management (0/3):** 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 (3/3):** 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.

**B0400 Marketing Research (0/3):** 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 stay in close touch with consumers’ needs and wants and make informed marketing decisions.

**B0416 Personal Finance (0/3):** This course helps students make better personal financial decisions, which means knowing how to spend and save money more wisely and to improve one’s standard of living. Fundamental personal finance topics such as budgeting, credit, taxes, insurance and investing will be discussed.

**B0558 International Human Resource Management (0/2):** This course introduces theories and practices to help students understand current issues and trends in international human resource management (IHRM). Topics covered include international business management, cross-cultural management, and international management.

**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.

**M0084 Business Diagnosis (0/3):** This course is designed to help managers identify, resolve, and prevent business problems. It covers every facet of the daily management of a business.

**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.

**M0094 Business Negotiation (0/3):** This course covers three main areas: (1) the analysis of business environments; (2) negotiation strategies; and (3) negotiation tactics.

**M0121 Service Management (0/3):** This course provides a framework of service activities that integrates marketing, operations, and human behavior as central to effective service management. The combination of text reviews, case studies, and readings makes this course suitable for all students hoping to become good service managers.

**M0136 Practice of Planning (0/3):** 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.

**M0196 Small and Medium Size Enterprise Management (0/3):** This course includes a general overview, thirty examples of mismanagement in small business, building public relations through media, effective management, perspectives on sales practices, and skills and tips for successful sales.
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.

M0286 Project Management (0/3): This course introduces fundamental concepts and elements of project management. The course also exposes students to various control aspects of projects, such as requirement management, request for proposals, project proposals, scheduling, project-based organization, cost control, and resource management. Students will gain the knowledge and skills in project management necessary for seeking employment opportunities.

M0339 Accounting I (3/3): This course focuses on accounting concepts, accounting models, and the interrelationship of financial statements. It also discusses accounting in the context of single proprietorship, partnerships, and corporations.

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 (0/3): 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.

M0395 Management Psychology (2/0): Management psychology is an academic and applied discipline which involves the scientific study of human mental functions and behaviors in business and organization. Management psychological knowledge is applied to various spheres of human activity including the development of self, individual difference, interpersonal interaction, wellbeing and stress, leadership, communication, career management, the treatment of mental health problems, and so on. Management psychology incorporates research from the social sciences, natural sciences, and humanities.

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.

M0494 Training and Development (0/3): This course includes six parts: training and development functions, needs-assessment and evaluation, instructional design, training delivery job skills for trainers, and trends for the future.
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.

M0517 Statistics (3/3): 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.

M0675 Current Issues in Management I, II (2/2): This mini-course contains sessions conducted by experienced business executives in order to counterbalance the deficiencies in regular academic courses. Important issues will be discussed in simple language so as to enable quick comprehension of essential concepts.

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.

M0898 Entrepreneurial Management (2/0): This course helps students discover proven and successful principles of business and then further analyzes the most advanced business models. The subjects involve how to find an alternative marketing model, brainstorming, how to formulate strategies for product and service marketing, how to price products and pinpoint markets through contact strategies of customers, and how to build a long and profitable relationship. These issues and considerations will be discussed in class.

M1081 International Marketing (0/3): This course presents an overview of the unique aspects of marketing in an international business environment and provides a framework upon which multinational marketing management decisions can be based. Emphasis is placed on the role of the international marketing manager in the development of marketing strategies for a variety of markets in diverse cultural, political, and economic circumstances. Focus will be placed on the decision-making process in the areas of foreign market analysis, target market identification, product planning, promotion, pricing and channels of distribution.

M1103 Knowledge Management (0/3): This course focuses on some key concepts such as: the knowledge cycle, the taxonomy of knowledge management strategies, etc. It will also examine knowledge management from the following perspectives: organization structure, management and technology.

M1104 Supply Chain Management (0/3): 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.

M1856 Market Survey and Forecasting (0/3): 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 (2/2): 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.

M1930 Human Resource Training and Development (2/0): This course aims to help students understand the process of human resource development and strategic planning within organizations. This course also provides professional practical training related to organizations.

M1931 Seminar in Management Information (2/0): 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 be also be presented in this course in order to assist students in building up their ability in information technology applications.

M1957 Financial Practices (2/0): This course is aimed at helping students develop an understanding of financial markets and a practical understanding of various markets, as well as to equip students with basic concepts for future investments and financial management.

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.

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.

M2019 Innovation and R&D Management (0/2): The process of innovation is difficult and complex. In this course, we will gradually explore topics that introduce strategic approaches to innovating.

M2017 Chain Store Alliance Management (2/0): This course will explore chain stores from three perspectives. Firstly, the planning of chain stores will be discussed, followed by the introduction of administration management activities in chain stores. The course will also cover chain store operation, merchandise, logistics, marketing, finance, human resources and MIS. Thirdly, the management control of franchises will also be explored in this section, such as franchises’ performance evaluation and management constitution.

M1105 Internet Marketing (2/0): Through theoretical investigation, brainstorming, and case analysis, students develop skills and strategies necessary for effective marketing via electronic media.

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.

M2020 Service Innovation and Designing (2/0): This course is divided into two modules. The first part explores the emergence of service innovation from the perspective of the internet. The second part requires designing a service from the perspective of physical interaction.
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.

M2053 Business Diagnosis and Management (2/0): This course aims to build-up students’ ability to manage enterprises through international management perspectives. It also helps students practice the process of diagnosing business problems through class materials, case studies, group reports and class discussions. This course provides training in problems analysis, identification of root causes, and consultation. It enables students to exercise their diagnostic abilities and therefore achieve optimal business management. Course objectives include: building up a normative concept related to business consultation and a social science-oriented diagnostic methodology to studies; learning attitudes and methods suitable for conducting case studies and statistic qualitative data analysis; practicing the process of business diagnosis, including: problems analysis, root-causes identification, and consultation; environment analysis, including: external environment, internal environment and industry environment.

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.

M2024 Service Science and Management (2/0): This course examines basic service concepts within the framework of service management. The subject integrates marketing, operation and human resource issues and provides students with a set of management tools to assist them to better understand the fundamental characteristics of services.

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.

M2104 Brand Management Practices in SMES (3/0): 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.

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.

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.

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.

**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.

**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.

**M2106 Raising Capital and Investment Issues of Smes (0/3):** As a result of the fast economic development, the national income also largely increases along with it; the traditional deposit idea is substituted for gradually by the investment activity.

**M2023 Advanced Practice in 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.

**M0260 Organizational Behavior (0/3):** 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.

**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.

**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.

**M0115 Multivariate Analysis (0/3):** The purpose of this course is to prepare students to analyze real data from real research, and to understand these analyses at a conceptual level. Toward this end, we will focus more on concepts and computer analyses and less on hand-calculations and mathematics.

**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.

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.

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 to 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 include 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.

**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 Study (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 its 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, cu).

M1366 Study to Service Management (3/0): This subject “Study to Service Management” is the study and application of knowledge about how to manage in service industry and service system. We hope 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 The Special Topic 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 the students who are not the 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 include 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 paper, we can help students to write their own paper.

M0905 Thesis Writing (0/3): This course introduces the fundamental concepts and elements of a 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 the knowledge and skills in conducting research and writing research papers.

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 would guide students and lead discussions for many case studies from the “Strategic Management” perspectives.

M1214 Study to Chinese Small and Medium Enterprises (0/3): To demonstrate 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.
DEPARTMENT OF ACCOUNTING

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

Chairman: Chang, Bao-guang (張寶光)

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, 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
Yen, Sin-hui (顏信輝); Huang, Cheng-li (黃振豐); Chang, Bao-guang (張寶光);
Kuo, Lo-pin (郭樂平)

Associate Professors
Chen, Jui-chih (陳獻智); Hong, Sheue-ching (洪壽卿); Lin, Ku-jun (林谷峻);
Kung, Fan-hua (孔繁華); Wang, Chen-Chin (王貞靜); Fang, Yu-Hui (方郁惠);
Han, Hsin-Wen (韓幸紋)

Assistant Professors
Chen, Wei-ju (陳薇如); Hsieh, Yi-hua (謝宜樺); Hsu, Chih-shun (徐志順);
Chang, Yu-Shan (張雅新西); Pei-ling Shan (單珮玲); Chang, Ya-Chi (張雅淇);
Fang-chi Lin (林芳綺); Chien-cheng Jennifer Chang (張謙恆)

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 138 credits of courses, including 100 credits of required courses and 20 credits of elective accounting courses.

2. Requirements for a B.A. degree in Accounting (Advance education):
   Completion of 138 credits of courses, including 100 credits of required courses and 20 credits of elective accounting courses.

3. Requirements for an M.A. degree in Accounting:
   Completion of 42 credits of courses, including 6 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 34 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.

B0071 Investments (0/3): The objective of this course is to provide students a basic understanding of modern investment theory and practice.

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.

B0033 Essentials of Civil Law (2/2): This course expects students to have full understanding of our rights and obligations. The Civil Code will be abundantly discussed as it regulates people’s daily life.

B0071 Investments (0/3): The objective of this course is to provide students with 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 affects of taxes, and tax-structure and its reforms.

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.

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.

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.

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): The course aims to help students to have some basic knowledge of taxation law.
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.

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 I (4/4 2/2): 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 semester will introduce the audit process to all main transaction cycles and accounts and study the completing audit—including subsequent event, contingent liabilities and audit report. Furthermore, students will investigate the various sampling technique in auditing and the auditing in a Computerized Environment.

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.

M0779 Tax Planning (2/0): This course is for one semester. The goal for this class is for all students to understand the recent development and the regulations of Taiwan taxation. We will introduce some tax laws and tax planning concept that used to be applied in Taiwan income tax, property tax, estate tax, donation tax and trust. We believe that all students will understand how to apply tax laws in their real life after they have studied this course.

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 are also needed to read by students to deeply understand the effects of e-commerce on business consumers.

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 lecture 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.

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.

M1958 Seminar in Auditing Practices (2/0): This course provides the knowledge of CPA firms’ and governmental auditing practice, including 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.

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 (I) (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 practice, to students.

T0466 English (I) (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.

Master’s Program

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.

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.

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.

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.

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 is to discuss the differences, risks and opportunities between electronic and traditional commerce environments. Furthermore, it is to study the research methods and procedures related to electronic commerce.

M1093 Quantitative Methodology of Accounting (0/3): The course introduces statistical methodology, joint with case study and data analysis with 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 in-depth understanding to 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.

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.

T0081 Research Methodology (0/3): This course trains students in using basic method and theories of research. Topics covered include the research process, basic research terminology, and research reasoning and data collection methods. In addition, we help students develop research ethics and thesis-writing skills.

TLAXM1A Master’s Program, Department of Accounting, 1A (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 in depth understanding to the relationship between human resource management and accounting.
DEPARTMENT OF STATISTICS

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

Chairman: Lin, Jyh-jiuan (林志娟)

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 masters 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 adjust to the age of the knowledge 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
Chang, Chun-tao (張春桃); Lin, Jyh-jiuan (林志娟); Tsai, Tzong-ru (蔡宗儒);
Wu, Chin-chuan (吳錦全); Wu, Shu-fei (吳淑妃); Wu, Shuo-jye (吳碩傑)

Associate Professors
Chang, Ya-Mei (張雅梅); Chen, Ching-hsiang (陳景祥); Chen, Li-ching (陳麗菁);
Chen, Man-hua (陳蔓樺); Chen, Yi-ju (陳怡如); Deng, Wen-shuenn (鄧文舜); Lee, Hsiu-mei (李秀美);
Wen, Bor-shyh (溫博仕)

Assistant Professors
Wang, Yi-Hua (王藝華)

Lecturers
Wang, Wen-yen (王文嚴); Yang, Wen (楊文)

Degree Requirements

The Department of Statistics offers both undergraduate and graduate programs.

1. Requirements for a degree of B.A. in Statistics:
   Completion of 139 credits of courses, including 97 credits of required courses and 20 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

**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.

**E1034 Introduction to Computers (2/2):** Topics of this course include: 1. Introduction to information society; 2. Networking operations and applications; 3. Word processing; 4. Hardware of computers; 5. Software of computers; 6. Applications of computer; 7. Computer programming.

**M0115 Multivariate Analysis (0/3):** 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 (0/3):** 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.

**M0184 Applied Computer Programnings in Statistics (2/2):** This course provides a basic and concise introduction to the programming language R and introduces some programming skills with the language regarding statistics in data manipulation, calculation and graphical display.

**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.
M0339 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.

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.

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.

M0481 Categorical Data Analysis (3/0): 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 (2/2): 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.

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 Security (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.

M2012 Epidemiology (3/0): This course introduces an epidemiological approach to health and diseases. The principles and methods of epidemiology are presented with applications of epidemiology to public health. The goal of this course is to help students understand the measures of mortality, the validity and reliability of diagnostic and screening tests, the efficacy of preventive and therapeutic measures (randomized trials) and analytic epidemiology (cohort study and cross-sectional study / case-control study, the causal inference).

M2152 The Special Topic for the Applied Statistics (I) (2/0): This course is to cultivate the members of financial institutions for graduation. Writing and talking are important for this class.
M2153 The Special Topic for the Applied Statistics (II) (0/2): This course helps students develop the ability to propose a project, collect the related data and make decisions.

S0061 Reliability Analysis (3/0): This course covers an analysis of failure data, estimates of hazard rates and failure time distributions for the reliability of components and/or systems. Additional topics may be included at the discretion of the instructor, if time permits.

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 multicolinearity.

S0210 Advanced Calculus (2/2): 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, rank tests, Mann Whitney Wilcoxon procedures, Kolmogorov Smirnov tests, and discussion and comparison with parametric methods.

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.

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.

S0763 Spatial Statistics (3/0): This course is an introduction to spatial statistics. Spatial data can be generally divided into three areas: geostatistical data, lattice data, and point patterns. Course content includes both theory and applied aspects of current statistical methods for analyzing data in these three areas.

Master's Program

B0486 Seminar on Financial Management (0/3): This course provides a comprehensive description of value-at-risk, a new benchmark to measure financial market risks. Recent VaR estimation methods’ development is stressed mainly in this course.

M0115 Multivariate Analysis (0/3): The objectives of this course are to cover a wide range of
multivariate application, 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 (3/0):** This course covers concepts of sampling survey, major sampling designs and its estimation procedures, and evaluation of precision of a sampling design.

**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.

**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 Data Analysis (3/0):** This course provides an overview of survival data analysis, including an introduction of the lifetime variable, censored data, parametric and nonparametric inference. Some advanced topics in biomedical applications will be also discussed.

**M1883 Statistical Methods in Clinical Trials (0/3):** This is a survey course that stresses the concepts of statistical design and analysis in biomedical research, with special emphasis on clinical trials. This course will be devoted mostly to statistical principles and methods in clinical trial research, but we will first provide a very brief introduction to Epidemiology. SAS for Windows statistical software will be used throughout the course for data analysis.

**M2034 Analysis of Censored Data (0/2):** This course focuses on the application of medical studies. We will introduce the type of censoring and learn how to deal with it. Course content includes survival functions, unknown baseline functions, frailty effects, and regression analysis.

**S0061 Reliability Analysis (0/3):** This course provides some statistical methods of reliability analysis to solve practical problems including the testing of whether the reliability of a given system at a certain age is sufficiently high, and etc.

**S0408 Design of Experiments (3/0):** This course is concerned with the learning of the design and analysis of experiment 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.

**S0594 Nonparametric Regression (3/0):** Nonparametric regression is a smoothing method for recovering the unknown regression function from noisy data, without pre-specifying the functional form of the regression function. The kernel smoothing (or local polynomials) method, which is very simple and useful among other several nonparametric alternatives, will be introduced in greater detail.

**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: Chang, Jau-shien（張昭憲）

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 21 full-time faculty members, 18 adjunct faculty members, and more than 920 undergraduate and graduate 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 198 workstations and 35 servers equipped with Windows Server 2003, FreeBSD, Windows XP, Microsoft Office, MIS tools, DBMS systems, MSDN AA, and extensive multimedia software. The laboratories not only provide popular application packages, such as Enterprise Resource Planning (ERP), Customer Relationship Management Systems (CRM), and Electronic Commerce (EC) middleware 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. In addition, the department has established a security operation center (SOC) in the information security laboratory.

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
Hou, Young-chang（侯永昌）; Hwang, Ming-dar（黃明達）; Shyur, Huan-jyh（徐煥智）; Cheng, Chi-bin（鄭啓斌）; Shaw, Reuy-shiang（蕭瑞祥）

Associate Professors
Chang, Jau-shien（張昭憲）; Lee, Hung-chang（李鴻璋）; Liang, En-hui（梁恩輝）; Liang, Te-chao（梁德昭）; Liaw, Heh-tyan（廖獻田）; Liou, Andy Ay-hwa（劉艾華）; Wu, Jin-po（吳錦波）; Yang, Ming-yu（楊明玉）; Jou, Chi-chang（周清江）; Yu, Chia-ping（游佳萍）; Chang, Ying-Hua（張應華）; Shih, Sheng-Pao（施盛寶）

Assistant Professors
Wei, Shih-chieh（魏世傑）; Wu, Ya-Ling（吳雅韓）; Day, Min-Yuh（戴敏育）; Hsieh, Yen-Hao（解燕豪）

Degree Requirements

1. Requirements for a Bachelor’s degree in Information Management:
   Completion of 140 credits of courses, including 99 credits of required courses and 41 credits of elective courses.

2. Requirements for a Master’s degree in Information Management:
   Completion of 32 credits of courses, including 8 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

**B0065 Operation Management (2/0):** Operation management is critical to improving productivity. Businesses can build up competitive advantages and enhance productivity by incorporating efficient work flow processes. This progresses sequentially from easy to difficult to complicated. This course not only discusses how businesses can gain competitive advantages, but also provides students with techniques and tools that they can apply to succeed in business.

**B0302 Economics (3/0):** 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 (3/0):** 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 (2/0):** 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.

**E1260 Formal Languages (0/2):** This course introduces the fundamental concept of finite automata, including regular expressions, deterministic finite automata, non-deterministic finite automata, epsilon-moves, and minimization of DFA.

**E1827 Network Programming (0/3):** This course introduces the Web application design and practices of implementation. This course is focused on using Microsoft ASP.NET With VB as practices tool to learn ASP.NET With VB programming language and to know the Web application programming that include: 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.

**E2751 Secure Electronic 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.

**E3264 Advanced Network Programming (0/2):** This course teaches students about collaborative design between iOS and web services. Published by group works, students develop problem-solving skills and learn to discuss and analyze the market’s ability and attitude.
M0007 Artificial Intelligence (0/2): This course is designed for students interested in Artificial Intelligence. It will cover the topics of knowledge representation, propositional and predicate logic, inference and resolution in problem solving, search methodologies, machine learning and soft computing.

M0142 Marketing Management (2/0): This course introduces the concept of marketing management and architecture. It aims to strengthen students’ understanding and practice of marketing management. Course content includes: marketing meaning and roles, marketing environment and information, market positioning, product strategy, pricing strategy, channel strategy, promotion strategy, marketing operations and network marketing.

M0171 System Analysis and Design (2/2): 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.

M0177 Systems Security (0/2): This course includes basic concepts of system security, security technology, operating system security, software security, and so on. The objective of this course is to make students familiar with the basics of system security and learn how to maintain and design a secure system.

M0271 Financial Management (2/0): 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): Project management involves the process of first establishing a plan and then implementing that plan to accomplish the project objective. The key to effective project control is measuring actual progress and comparing it to planned progress on a timeline and taking corrective action immediately. By mastering these concepts, students will learn how to avoid the pitfalls of projects.

M0400 Management Information System (2/0): The main purpose of this course is to help students acquire basic knowledge of MIS. Students will come to understand the applications of information technology in each field and enhance their abilities in this area. Course content includes an introduction to MIS, information technology infrastructure, key system applications for the digital age and building and managing systems. After learning this curriculum, students can understand the meaning of MIS in advance.

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 Networking and Telecommunications (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.

M0504 Organization Management (0/2): The purpose of this course is to equip students with the core concepts and skills for organizational management that will allow them to make better decisions in uncertain circumstances.

M0517 Statistics (0/3): 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 includes 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 (0/2):** This course is designed for students interested in mathematical foundations of computers. It will cover the topics of network flows, counting techniques, recurrence relations and generating functions, combinatorial circuits and finite state machines, algorithms and their efficiency.

**M0724 Object Oriented Programming (3/3):** This course discusses object-oriented design and its implementation though 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.

**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 Enterprise (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.

**M0929 High Tech. Marketing (0/2):** This class discusses the marketing strategies of hi-tech products. Relevant issues related to hi-tech product marketing include: competitiveness and value chains, pricing and channels, product life cycles, consumer behaviors, R&D and marketing integration, new product development, time to market, and green supply chain.

**M0930 Data Warehousing (2/0):** This course introduces the fundamental concepts and technologies of data warehousing. Topics include data warehousing, data mining, business intelligence, OLAP technology, and data cube computation and data generation.

**M0947 Data Mining (0/2):** This course introduces the fundamental concepts and technology of data mining. Topics include association analysis, classification, prediction, cluster analysis, sequence data mining, social network analysis, link mining, text mining and web mining.

**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.

**M1103 Knowledge Management (0/2):** Students will learn fundamental theories and essential principles of knowledge management through reading text books and academic journal articles. This course also introduces the use of knowledge management technologies in business.

**M1132 Markup 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.

**M1185 Network 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.

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 (0/2): This class discusses technologies and management issues in e-business, including enterprise resource planning, supply chain management, customer relationship management, knowledge management, social networking, and e-commerce.

M1655 Technologies on Network Security (2/0): This course introduces issues of technology in network security. Topics include network security threats and attacks, practices of hackers, authentication, authorization and access control, network security architecture design, basic cryptography, information systems and network models, firewalls, network intrusion detection and multi-layered defense, network security management.

M1745 Multimedia Design and Commercialization (0/2): Multimedia tools play an important role in the business goals of enterprises. This course teaches students basic skills in the use of multimedia tools and how to create innovative applications using such tools.

M1750 The Research of Enterprise Web-Based System (0/2): This course introduces important cases of enterprise web-based information systems. Students will not only learn detailed knowledge on how to build and maintain enterprise web-based information systems, but also learn how these enterprises implement such systems into their businesses.

M1751 Interpersonal Communication (0/2): This course introduces fundamental concepts and skills in interpersonal communication. It focuses on professional and effective expression in business and covers the following topics: basic communication, verbal communication, employment communication, and successful communication.

M1766 Application Developing on Windows Platform (2/0): 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.

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.

M1866 Software Engineering Process Management (2/0): Understanding the software engineering process is critical to building a quality information system. How to manage the mentioned process is a complicated but necessary task for engineers (enterprises). This course aims to enable students to learn the basic skills, knowledge and methods required for software engineering process management.

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.

M1880 Managing IS Professionals (3/0): This course introduces related academic IS personnel studies and practical IS professional management phenomena, including personality of IS professionals, attitudes of IS professionals, value-based and ethical issues of IS professionals, work motivations of IS professionals, learning and performance appraisal of IS professionals, work stress of IS professionals, team behavior of IS professionals, and so on.
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.

M1897 Business Software Applications (2/0): This course is designed to introduce the concepts, software, and applications of data processing.

M1917 The Implementation of Enterprise Information System Platform (0/2): XOOPS is a kind of dynamic web content management system (CMS) possessing high scalability, object-oriented technique, and usability. This course introduces XOOPS software to train students on how to quickly set up professional commercial websites, including dynamic community websites, internal Intranet sites, portals, or web logs.

M1918 Implementing a Windows Enterprise Network (2/0): This course teaches students about Windows Server. Students will install, plan and implement Windows Server in order to build capabilities in designing and managing Windows Server. Students will then work together and use virtual tools to analyze and design business solutions for enterprise network infrastructures.

M1919 PHP Programming Language (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.

M1920 ASP.net Database Programming Development (0/2): 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.

M1952 TCP/IP Networking (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.

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.

M1954 Information Security (0/2): This course introduces methods by which individual users or businesses protect information and information systems from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. Key information security concepts and case studies are discussed.

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.

M2082 Case Study of Electronic Small and Medium Enterprise (0/3): The Information Technology applies in Small and Medium Enterprise has become one tendency, nowadays the various occupations apply the newest computerization technology reduces the cost and increases the efficiency, then creates the competitive advantage for enterprise. Course content focus that Information Technology application for Small and Medium enterprise in Taiwan, including Electronic industry, Telecommunications industry, Healthcare industry, Digital Content industries, Enterprise Cloud processing and Mobile Commerce Application. Schoolmates may find out the various tendency for Information technology Application in Small and Medium Enterprise.

M2083 Trend and Practices of Enterprise Cloud Computing (0/2): The course describes the contents of the three most common cloud computing model (SaaS, PaaS, IaaS), and analysis of the market corresponding to the services provided by vendors such as Google, Amazon. Insight into investigate when originally closed corporate IT infrastructure, in response to the open market for cloud computing, needed to face the challenges, and the need to think about change practices.

M2084 Practices of Business Intelligence (0/2): This course introduces the fundamental concepts, technology, and cases of business intelligence for strategic decision support. The following topics are covered: business intelligence technologies, data integration, data collection and analysis, value added application of decision support tools.

M2085 Enterprise Information Risk Management (0/3):
1. To introduce ENTERPRISE INFORMATION RISK MANAGEMENT
2. What is the meanings of RM?
3. What is the meanings of ERM?
4. What is the meanings of ISRM?

M2163 Information Technology for Innovative Entrepreneurial Management (0/2): This course introduces a newest concept of the Information Technology and Entrepreneurial Management and to use the effective and innovational methods for Entrepreneurial Management by Information Technology. Students can use the Information Technology practical applications of Innovative Entrepreneurial Management for future career.

M2164 Networked Multimedia Applications (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.

M2165 Mobile Learning (3/0): This course introduces the background and development issues of mobile learning. Start with the basic definition, this course introduces the characteristics, opportunities, and challenges of mobile learning. The societal and cultural impacts of mobile learning will also be included in the contexts. This course grounds students by offering theoretical and conceptual recognition of the ages of mobile learning and, therefore, gaining the capability of taking most advantages from this emerging trend of new technology.

M2166 Advanced Object-Oriented Programming (3/0): 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.

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 by 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 practicers 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 idea show, like AppWorks.

S0252 Fundamentals of Mathematics (2/0): This course is designed for students interested in
mathematical foundations of computers. It will cover the topics of sets, relations, functions, coding
theory, graphs, trees, and matching theory.

S0325 Calculus (3/0): 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 covers many topics in Linux, including basic
concepts, advanced management operations, system build up, kernel compilation, etc. Students will
learn how to build up and manage a Linux operating system in this course.

Master’s Program

B1594 Video Indexing and Retrieval (2/0): Discussion about the properties of video and how to
index and retrieve video information.

E1234 Data Analysis: Method & Application (0/2): This course discusses data analysis methods
including data type, the regression model, analysis of variance, categorical model and running an SAS
program using an empirical survey data.

E2826 Introduction to Information Security (2/0): This course is designed for students interested in
information security and related technology. It provides an overview of various security threats and the
related means to help in establishing countermeasures. We will cover the formal procedures that need
to be instituted for proper management. Ethical and legal aspects related to management of Information
security are also to be addressed. It aims to be a one-semester introductory course at the graduate-level
or senior undergraduate level.

E2827 Software Project Management (0/2): This course covers knowledge and techniques
necessary to manage the development of software products. Within this context, topics such as
software project planning, software estimation, software configuration management, software quality
assurance, extreme programming, and development team organization will be discussed.

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 (2/0): This course focuses on critical issues in IS
management, including IT infrastructure, business process redesign, effectiveness of software
development, managing databases and communication networks, and IS planning.

M1010 Applications of JAVA Programming (0/2): This course introduce the advanced concept of
Java programming. In addition, the students are required to implement small systems by using Java for
better understanding of the content of this course.

M1348 Information Security Management (2/0): 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 (0/2):** To introduce and discuss the ISO 27001/20000 operational practices of TKU, the BS 10012 implementation practices of TKU, to visit the data centers which were already certified with ISO 27001, to invite the information security management experts to give speeches and discuss what we got, to introduce and discuss the current status of the TKU campus information security, to discuss the research reports of related information security, to discuss and exercise the hacker tools.

**M1450 Interpreters (0/2):** This course explores techniques for Interpreters. In the first part, we discuss the Java byte code and the Java virtual machine. In the second part, we define a Java syntax tree and develop a recursive interpreter operating on it.

**M1521 Special Topics in Database Management Systems (3/0):** The course discusses the fundamental and advanced topics about database management systems, including data model, data storage, data retrieval, query optimization, transaction management, crash recovery, parallel and distributed databases, and new applications for non-alphanumerical databases.

**M1649 Data Acquisition Method and Thesis (0/2):** This course describes the various types of data collection methods and reviews the library electronic databases to help gather information needed for research.

**M1773 Technologies on Network Security and Application (3/0):** This course introduces the essential technologies on Network security. Theses includes the traditional symmetric system (DES, AES), modern public key system (RSA, DSS), hashing function (MD5, SHA-1,SHA-2), and authentication protocols (PKI, IPsec), etc.

**M1909 Compiler Design (2/0):** This course discusses the techniques of compilation. We focus on the recursive-descendent parsing in order to implement a practical parser for the Java programming language. The generated syntax tree will be used by a Java interpreter.

**M1984 Practices of Project Management (1/1):** This course trains students in the management of practical projects. Each student will lead a group of undergraduate students to implement software systems in the course “System Implementation”.

**M2087 Seminar on Information Security (0/2):** This course introduces current research in information security including key concepts in information security management, information security behaviors, strategy and information security policy, information security policy compliance, security risk management, access control, workforce security, and security service adoption.

**M2091 Service Science and Service Innovation (0/2):** This course is to introduce the basic concept of service science and service innovation. Students can learn knowledge of service management, design and engineering by reading key papers and case studies.

**M2092 Ontology Engineering (2/0):** This course will first introduce the basic concepts of Ontology. This course will bring the idea of how to attach meaningful tags using ontology to web page data so that the web server can automatically provide useful and helpful information and services to the user. The advanced concept of Ontology Engineering is important to this course and the practice of following the steps of establishing ontology for practical use as well as using various tools for building ontology will be arranged.

**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.
M2192 Recommender System (2/0): The aim of recommender systems is to help find the desired items of a given user. This course will introduce the collaborative filtering, content-based, and knowledge-based techniques for recommendation. It will also discuss other related topics which include the generation of recommendation explanations, context-aware recommendation, map visualization, and performance evaluation. In addition to case study of some typical recommendation systems, this course will also encourage the students to prototype a recommender system using existing packages and datasets.

M2194 Topics in Electronic Service Management (2/0): The objective of this course is to help students understand the management of operations in service organizations. The content includes the service concept, customer and supplier relationships, service delivery, managing strategic change, and etc. Students will study service innovation and management issues to realize how service performance can be improved.

M2196 Computational Intelligence (2/0): Students can learn the basic knowledge of evolutionary computation which belongs to the field of artificial intelligence. In this class, some techniques can be introduced such as genetic algorithms, genetic planning, evolution strategy and evolution planning. In addition to clarifying the basic theory of evolutionary computation, the application of evolutionary computation on business can be explained.

T0081 Research Methodology (2/0): This course discusses fundamental issues in research terminology, research procedures, and general research approaches for information systems researchers. It equips graduate students with the ability to read research reports in the IS field and enables them to conduct IS research.

EMBA Program

M0990 Information Management Seminar (0/3): This course equips students with the ability to read and analyze academic research papers. Through surveys and presentations, it will provide students with information on theories and research methodologies widely used in information systems (IS).

M1522 Business Intelligence (0/3): This course discusses fundamental concepts and research issues in business intelligence. Topics include decision support systems and business intelligence, data warehouse, data mining, text and web mining, and business performance management.

M1604 The Plan and Management in Large Scale Projects (3/0): This course shares real life experience in planning and management for large scale projects. We will use industry projects as real case studies and discuss the entire process involved in the projects. We hope the students not only gain skills in the planning and management of large scale projects, but also acquire knowledge on how to complete an industry project.

M1641 Strategies and Policies of Information Technology Management (3/0): This course covers information strategies and policies at Tamkang University, case studies of enterprises, and national security measures taken to enhance information and communication in Taiwan.

M1843 Internet Technology in E-Commerce (0/3): This course is designed for students interested in E-commerce technology. It provides an overview of various technologies that help in establishing an E-commerce environment. We will cover topics such as RFID, soft computing, data mining, clustering and classification, artificial intelligence, information security, web engineering, and visual cryptography.

M1990 Network Management Practice (3/0): This course introduces basic concepts as well as practical issues of Network Management, including phases of planning, implementation, and management. Through the use of simulation software, we discuss tradeoffs of usage, security and management. The purpose of this course is to let learners not only know how to plan and configure a network system, but also know why they select the way they do in order to satisfy the particular management issues.
M2078 The Case Studies of Applications of Information Technology (3/0): This course uses case studies to discuss various issues related to organizations and individuals with information technology. Topics covered include new IT creative applications, new IT trends, organization impacts, change management, business planning, network marketing, organization behavior, IT management, EC, and cross-organizational applications, etc.

M2139 Information Security Technology and Application (0/3): This course introduces the essential technologies on information security. These includes the traditional symmetric system, modern public key system, hashing function, and authentication protocols, etc.

M2198 Information Management Theory (3/0): The purpose of this course is to introduce the first-year EMBA students to information systems (IS) theories and their applications. Specific topics contain the dimension of IS research, prominent theories in each dimension, the detailed content and evolution of each theory, and how to apply theories in research and how to construct new theories.

M2214 Business Counselling: Information Management (3/0): This study integrates theories and practices, aiming to cultivate students with abilities of exploring problems and solutions in information management of businesses via field studies.

T0081 Research Methodology (0/3): This course discusses fundamental research issues regarding research terminology, research procedures, and general research approaches for information system researchers. It will prepare graduate students to be able to read research reports in the IS field and enable them to conduct IS research.
DEPARTMENT OF TRANSPORTATION MANAGEMENT

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

Chairman: Tao, Chi-Chung (陶治中)

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, three special programs of intelligent transport systems (ITS), logistics, and environmental science are flexibly embedded in the course design for students to choose for their future career.

Faculty

Professors
Chang, Sheng-hsiung (張勝雄); Chen Wan-Hui (陳菀蕙)

Associate Professors
Luo, Shiaw-shyan (羅孝賢); Fan, Chun-hai (范俊海); Tong, Chee-chung (董啟崇)
Chen, Wan-Hui (陳宛慧); Liu, Shih-Sien (劉士仙); Shing, Chi-lyang (辛其亮);
Tao, Chi-chung (陶治中); Hsu, Chao-che (許超澤); Wen, Yuh-horng (溫裕弘)

Assistant Professors
Chung, Chih-Lin (鍾智林)

Degree Requirements

1. Requirements for a Bachelor of Science degree:
   The Bachelor of Science degree is awarded after completion of 136 credits, with 95 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 behaviour, system characteristics, and elements and operations of traveller/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 (2/2): This course provides an introduction to the major areas of
traffic engineering and transportation planning. It is suitable for upper-level undergraduates.

E1028 Computer Application on Transportation (3/0): This course draws on the Statistical
Analysis System (SAS) as a basis for explaining transportation problems and thereby enhancing the
problem-solving skills of senior students. Course content includes a demonstration of basic SAS
operations, hypothesis formulation of transportation problems, regression analysis, factor analysis, and
structural equation modelling (SEM).

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.

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 (0/1): 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 emphasise 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.

M0431 Transportation & Storage Management (0/3): This course covers physical distribution
systems, logistic systems, transportation, and facility and inventory decision in logistics.

M0482 Business Administration in Transportation (3/0): 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.

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.

M0607 Highway Geometric Design (0/2): Introduction to highway functions, considerations of corridor’s selection, design controls and criteria, horizontal alignment design, vertical alignment design, cross section design, intersection and interchange design, introduction to computer aids for highway geometrical design.

M0671 Transportation Environment Impact Evaluation (0/3): 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.

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.

M0869 The Management of Ports (0/3): The aim of this course is to introduce basic concepts of shipping ports, as well as facilities and cargo-handling equipment located at ports. We discuss different types of ports and provide students with a clearer picture of how port management works. Students will learn about the procedures that occur when a ship arrives at a port, the storage of cargo at ports, vessel surveys, tonnage measurement, port operator management and port traffic structures.

M0870 International Freight Transportation (2/0): 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 to cultivate students’ professional ability in the field of international freight transportation.

M1039 Intelligent Transportation System (3/0): 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 (3/0): 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 (0/2): 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.

M1220 Communication Technology in Transportation (0/3): This is a basic professional class that teaches students about communication technology, global trends of Intelligent Transportation Systems (ITS), telemetric and car electronics. In addition, students will also gain experience in teamwork and practical communication.

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.

**M1748 Travel Behaviour Science (3/0):** The purpose of this course is to introduce the theory and practice of transportation behaviour. In the first half semester, psychology and behavioural science are examined. In the second half-semester, related transportation behavioural problems are discussed and their connection with current issues is explored.

**M1834 Transportation Marketing Management and Public Relations (3/0):** The purpose of this course is to introduce the theory and practice of marketing and public relationship management in the field of transportation. In the first half-semester, marketing management and public relations are examined. In the second half-semester marketing management and public relations problems are discussed and their relationship with current issues is also explored.

**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.

**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.

### Master’s Program

**E0769 Mathematical Programming (0/3):** This course introduces how to formulate a general problem in Mathematics. Moreover, various types of theorems and their associated algorithms are summarized.

**E1188 Transportation Network Analysis (3/0):** This course provides an introduction to basic structures and solution technologies used in transportation network analysis. The basic theoretical development and solution procedure of each fundamental transportation network algorithm are discussed in this course, to provide students with training in the field of basic transportation networks.

**M0115 Multivariate Analysis (3/0):** Multivariate analysis focuses on the theory and application of SAS. Through real case studies, students will improve their problem solving abilities. Course content includes 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 processes. This course will be conducted in three parts. The first involves basic concepts of systems and simulations. The second covers general simulation methodologies; and the third pertains to applications of systems simulation techniques in transportation and traffic engineering fields.

**M0668 Airport Planning and Design (0/3):** This course introduces fundamentals of airport planning and design. The first part is an overview of aircraft characteristics related to airport operation. Part two focuses on the airport traffic control principle and operation including capacity computations. Planning issues are introduced in the third session, including planning at different levels, site selection, and demand forecasting. Finally, geometric designs and traffic control devices will be discussed.

**M0873 Transportation System Analysis (I) (3/0):** This course will introduce systematic system analysis and its application to the transportation system. A framework of transportation analysis will be illustrated along with all related model components. Theories and specifications of disaggregate demand modelling will be discussed, including those of specification and estimate issues.

**M0874 Systems Analysis in Transportation II (3/0):** Various traffic assignment problems will be introduced in this course, from basic definitions and models to advanced dynamics and/or stochastic assignment problems.

**M0924 Transportation Research Methods (I) (2/0):** This course explores the principles and the way of thinking and research methods of social science. It also provides basic training for thesis writing.

**M0925 Transportation Research Methods (II) (0/2):** This course provides a foundation for transportation research. It offers a basic introduction to the concepts and techniques of transportation research methods and some of its signification applications in transportation management decision science. It also provides survival guidelines to graduate students for conducting research, formulating research topics, research methodologies and approaches, and learning how to write proposal and thesis.

**M1079 Operation Management of Mass Transportation (0/3):** This course introduces the planning, operation and management of public transportation. Course content includes data collection, headway determination, timetable development, vehicle scheduling, service design, network design, and future development.

**M1464 Traffic Flow and Traffic Control Theory (3/0):** This course offers a basic introduction to traffic engineering. It describes kinds of traffic conditions and explains the applications of the Traffic Control Model. This course covers statistical models, car-following theory, shock wave analysis and queuing theory.

**M1656 Global Logistics Management (0/3):** This course examines knowledge related to global logistics management. In addition, it discusses basic concepts, methodologies, and strategic planning issues of global supply chain management. The course discusses issues concerning global supply chains, international logistics, global transportation planning, intermodalism, integrated logistics, advanced information technologies and future development. During the course, several practical case studies will be introduced.

**M1688 Spatial Analysis and Location Theory (0/3):** This course aims to introduce general regional and spatial theories as well as analytical methods. It is also designed to further prepare students to apply systematic analysis to practical case studies to enhance their abilities in independent thinking and their research capabilities.

**M1692 Solution Algorithms for Transportation Planning (0/3):** This course comprises two sections: computer programming algorithms and research methodologies. Course content includes:

**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 an 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.

**M2026 Practice of Enhancement for Urban Traffic Environment (0/3):** This course aims to teach students how to identify traffic safety problems in urban areas and utilize 3E strategies to improve such problems. 3E strategies include traffic engineering (Engineering), law enforcement (Enforcement) and traffic safety education (Education). Students will apply professional knowledge learned from various courses to improve traffic safety problems in urban areas.

**M2135 Special Topics on Intelligent Transportation Systems (3/0):** The purpose of this course is to introduce key technologies and their applications to the Intelligent Transportation System (ITS). In the first half of the semester, remote sensing, GPS, GIS and communication technologies are examined. In the second half of the semester, related ITS applications emerging with these technologies are discussed and their connection with telemetric, cloud computing and internet of things is also explored.

**M2201 Survey and Analysis of Travel Demand (3/0):** This course aims to learn how to carry survey and analyses for investigating travel demand. Both methods in qualitative research (e.g. focus group study) and quantitative research (e.g. questionnaire survey) will be covered.

**M2202 Special Topics in Urban Transportation Management (2/0):** Make the students understand the important issues of traffic management in urban area. Assist the students to develop their own research topics.
DEPARTMENT OF PUBLIC ADMINISTRATION

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

Chairman: Lee, Chung-pin (李仲彬)

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 analyst, 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 four 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 Tank, news and media industry, banks and financial organizations, and congressional staff.

Faculty

Professor
Chen, Ming-siang (陳銘祥); Lin, Tsong-jyi (林聰吉)

Associate Professors
Hsiao, Yi-ching (蕭怡靖); Huang, Irving Yi-Feng (黃一峯); Lee, Chung-pin (李仲彬); Li, Pei-yuan (李培元); Lin, Li-hsyang (林麗香); Tseng, Kuan-chiu (曾冠球)

Assistant Professors
Chen, Chih-wei (陳起雄); Han, Charles chao (韓釗); Huang, Chen-Yu (黃瑩瑜); Huang, Wan-Ling (黃婉玲)

Lecturer
Chang, Jen-chieh (張人傑)

Degree Requirements

The degree requirements of the department are as follows:
1. Requirements for a degree of B.A.:
   A total of 141 credit hours are required for graduation. Of these 141 hours, 96 credit hours are required courses and the remaining 45 credits are electives; 22 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 are required for graduation (excluding credits for thesis). Of these 33 credit hours, 4 courses with a total of 8 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 34 credit hours (excluding credits for thesis) are required for graduation. Of these 34 credit hours, 6 courses with a total of 15 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 share holders, 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 Organization (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 it’s 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.

M0630 Special Topics In Strategic Management (0/2): This course discusses how organization can increase its responsiveness to the environment and improve its capability to use resources by the process of strategy management. This course will introduce general strategy management frameworks and methods, and the focus will be on public sector.

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 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.

M1030 Seminar on Political Economics (2/0): The purpose of this course is to provide students with an introduction of the relative issues in the study of political economy, which influenced the global political economic transformation in the 20th century. This course will focus on the development of advanced democratic states, the economic policy of transformed states, and the way of how to develop the last developed states. This course will thus enhance the students’ understanding of the contemporary political economic situations.

M1122 Special Topics On Ethnic Politics In Taiwan (2/0): This course is designed to introduce the structure, politics and policy of ethnic relations in Taiwan.

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 thesis: 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.

**M1385 Seminar on Political Institutions (0/2):** This course is designed to equip students with basic concepts and theories on political Institutions.

**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.

**M1815 Seminar on Administrative Practice (2/0):** In this course, the contents of public administrative practices will be introduced. We then select five important topics in this field for discussion, such as the administrative program and budget, management of administrative performance, administrative organization reform in central governments, and e-governments.

**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.

**M1874 Seminar on Environmental Policy (2/0):** This course will provide students an overview of environmental policy making with particular attention to how politics and science interact with each other to shape the policy making process. Case studies will be integrated into class discussion to help build connection between theory and practice.

**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.

**M1989 Seminar In Technology Policy and Innovation (0/2):** This course examines the innovation process and the decisions government makes to secure the benefits of science and technology to a
society. We begin with discussion on the intersection of science, technology and innovation. The public nature of scientific knowledge leads us to further explore the roles of government and policy tools commonly adopted to promote technological innovation. We also tackle some debates on S&T policymaking such as the allocation of S&T funding, priority setting in S&T policy and potential injury of research commercialization to open science.

**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.

**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: Tsaur, Ruey-chyn (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, it 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

Professors Emeritus
Sheng, Ching-lai (盛慶琜); Yang, Wei-tzen (楊維楨); Huang, Wen-tao (黃文濤)

Chair Professor
Chang, Horng-jinh (張紘炬)

Professors
Ou-Yang, Liang-yu (歐陽良裕); Chen, Hai-ming (陳海鳴); Liao, Shu-hsien (廖述賢); Shih, Hsu-shih (時序時); Chuang, Chung-chu (莊忠柱); Tsaur, Ruey-chyn (曹銳勤); Lii, Pei-chi (李培齊); Chen, Shui-lien (陳水蓮)

Associate Professors
Ni, Yen-sen (倪衍森); Lou, Kuo-ren (樓國仁); Lee, Hsu-hua (李旭華); Lin, Chang-ching (林長青); Niu, Han-jen (牛涵錚)

Assistant Professors
Chen, I-fei (陳怡妃)

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 137 credits of courses, including 96 credits of required courses and 41 credits of elective courses, where at least 20 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 42 credits of 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 39 credits of courses, including 24 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 2 credits of the required course ‘University Education and Instruction’ and 11 credits of required seminar courses and 1 credit of ‘Mathematics Writing’. Students are also required to submit a written doctoral dissertation completed under the supervision of a faculty member and pass an oral examination. There needs to be at least two research papers 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.

B0173 Commercial Law (0/3): This course discusses Business Law and related case studies.

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 behaviours, 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**

**D0035 University Education and Instruction (0/2):** This course consists of five parts: the first explores the development and change of ideas and the spirit of a university; the second involves understanding recent development trends and reform directions of higher education in advanced countries; the third explores problems, strategies and perspectives of higher education in Taiwan; the fourth examines the impact of the knowledge-based economy on higher education and its challenges; the last section aims to enhance the quality of higher education and competitiveness.

**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 Topic 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.
The Office for AACSB Accreditation

Chair: Lin, Ku-Jun (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 taking the results as bases for continuous improvement.

Currently we are in the PreAccreditation 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 21 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 the 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: Lin, Chiang-feng（林江峰）

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 two separate programs (Business or Management), each of which covers the following fields of study:

1. Business (EMBA)
   International Marketing, International Business, Banking and Finance, Insurance Management

2. Management (EMBA)
   Business, Administration, Accounting, Information Management, Public Administration, 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 2,200 EMBA alumni.
3. Offers nine separate programs in Business and Management and employs around 200 faculty members to provide students with abundant resources.
4. Provides cross-discipline training. Students not only select core courses, but also electives from each of the nine separate programs. They enjoy different learning methods from various EMBA programs 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 renowned enterprises; academic seminars; softball tournaments; and year-end celebrations, which enhance interaction between students and enterprises.
6. Facilitates Cross-Strait exchange between students and scholars and short-term courses with cooperating 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 17 consecutive years in an annual survey conducted by Cheers Magazine.
COLLEGE OF FOREIGN LANGUAGES AND LITERATURES

Dean: Wu, Hsi-deh (吳錫德)

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 four graduate programs: English, French, Japanese, and Spanish (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 (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

A0685 Journalistic English (2/0): This course equips students with the skills necessary to read English newspapers with ease. Students will become familiar with various aspects of a news story, ranging from headlines to its many other constituents. After getting started in the basic structures, students will be introduced to various types of news stories, ranging from political news and financial news to medical news. Editorials and columns will also be included in the readings.

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.

A0853 Korean (2/2): Basic words, phrases and sentences of Korean are introduced and analyzed in this class.

A1328 Spanish (Ⅰ) (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.

A1849 World Masterpieces in Chinese Translation (2/0): This course introduces some literary masterpieces of the world to students in the College of Foreign Languages and Literatures, in order to meet the requirements in their own respective fields. This course is also appropriate for students in other colleges of Tamkang University.

F0077 The Theory and Practice of International Relation (3/0): 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 (0/3): 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.

F0137 Advanced English Proficiency (0/2): If time permits, this course will cover all four aspects of the English language, including reading, writing, listening and speaking. We will read, discuss, comment on and then write responses to the subjects covered in the course.

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 interdisciplinary 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 (0/3): 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 (2/0): 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).

F0496 Musical Comedy in France (0/2): This course consists of the following parts:
1. Introduction to French musicals over the past thirty years.
2. Introduction to French songs.
3. Introduction to the relationship between French songs and French musicals.
4. Introduction to American Broadway musicals.
It is hoped that through this course students can learn more about French songs, musicals, and culture.

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 (1). 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 (0/2): 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 (2/2): 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.

T0480 Faces of the European Countries (0/3): Europe is one of the centers of human civilization. Many European cultures are remarkable and have enriched our modern life. This course guide students to explore the diversity of European cultures and treasure the beauty of Europe through audio-visual methods.

T0481 Tibetan Language and Culture (0/2): The objective of the course is to introduce the Tibetan language, including its writing system. Also covered are a special introduction to Tibetan history, religion, art of Tangka, music, Tibetan medicine, and the teaching of death, ritual life, contemplative traditions, and its environment. The focus will be on the historical and cultural backgrounds of Tibet.

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.

F0865 Science Fiction Literature and Film (2/0): In this survey of science fiction film, we view films and clips to analyze cultural antagonisms reflected in films and social issues defining the period. Essays on science fiction and related film theories will be studied and made available in a course handbook. The focus of the course will be on issues in science fiction as a genre and historically, with emphasis on explorations of the effects of technology on the individual and society; post-apocalyptic films; visions of the future in film and TV; and narrative patterns in SF films.

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.

F0999 Latin (0/2): Latin is the origin of the Spanish, French, Portuguese and Italian and has also left a large footprint in German, English and other Germanic languages. Western Civilization comes from Rome. For this reason, Latin is the key to understanding the thinking, history, literature and culture of the West. The objective of this course is that students acquire basic knowledge of Latin and Rome in order to better understand the culture of the heirs of Roman civilization.

F1000 Arabic (0/2): This course is designed to introduce students to basic Arabic grammar and language learning.

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.

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 include 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.

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.
DEPARTMENT OF ENGLISH

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

Chairman: Robin 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 2013-2014 academic year, the Department accepted 1,139 undergraduates, 71 M.A. students, and 60 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 41 full-time and 73 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 41 full-time employees, 36 hold doctoral degrees specializing in literature, TESOL, linguistics, and other related fields.

Faculty

Professors
Chiu, Han-ping (邱漢平); Tsai, Chen-hsing (蔡振興)

Associate Professors
Brink, Dean Anthony (包德樂); Chen, Chi-szu (陳吉斯); Wu, I-fen (吳怡芬); Chen, Pei-yun (陳佩雲); Chen, Yi-wu (陳宜武); Tu, Ming-hong (涂銘宏); Huang, I-min (黃逸民); Huang, Yueh-kuey (黃月貴); Huang, Yung-yu (黃永裕); Lin, Yi-ti (林怡弟); Ozawa, Shizen (小澤自然); Shen, Sy-ying (沈斯芸);
Tseng, Yu-ching (曾郁景); Wang, Ai-ling (王藹玲); Wang, Xu-ding (王緒鼎);
Yau, Jia-ling (姚嘉玲); Yu, Hsi-hsi (游錫熙)

Assistant Professors
Chang, Yea-huey (張雅慧); Chen, Chien-chih (陳建志); Tsai, Jui-min (蔡瑞敏);
Chyan, Chin-jau (錢欽昭); Deng, Chiou-rung (鄧秋蓉); Hu, Ying-hsueh (胡映雪);
Huang, Shih-yi (黃仕宜); Kuo, Chia-chien (郭家珍); Kuo, Yi-chun (郭怡君);
Lee, Jia-ying (李佳盈); Lin, Ming-huei (林銘輝); Yang, Ya-chuan (楊瑞娟);
Ralph, Iris (羅艾琳); Sieh, Yu-cheng (施玉政); Wang, Hui-chuan (王慧娟);
Chen, An-chi (陳安霓)

Lecturers
Brown, Iain Kelsall (包俊傑); Lewis, Kevin Alan (陸凱文); Redmer, Guy M. (雷凱);
Gemmill Simpson IV, Paul (辛譜生); Wang, Li-yu (王麗毓); Wang, Li-yu (王麗毓);
Wu, Yu-yun (吳瑜芸)

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 138 credits of courses, including 93 credits of required courses, 20 credits of elective English major courses, and 25 credits of any other courses.

2. Requirements for an M.A. degree in English Literature:
   Completion of 33 credits of courses, including 12 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.

3. Requirements for an M.A. degree in TESOL:
Completion of 32 credits of courses, including 13 credits of required courses and 19 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.

4. Requirements for a Ph.D. degree in English Literature:
Completion of 34 credits of courses, including 6 credits of required courses and 28 credits of elective 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.

5. Requirements for a Ph.D. degree in TESOL:
Completion of 34 credits of courses, including 5 credits of required courses and 29 credits of elective courses. Students are required to pass qualifying examinations within the first five years, publish at least one research paper in an academic journal, 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 Literacy 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 (0/3): 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 (3/0): 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.

A1830 TESOL Practicum (2/0): This course provides participants with practical experience to improve the quality of their teaching. The focus will be on teaching techniques, awareness of personal teaching style, lesson-planning skills, ability to select/adapt materials, and other issues related to learners and classroom dynamics.

A1909 Language and Culture (0/3): 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 (0/3): 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.

A2226 English Writing III (1/0): Introduction; Diagnostic Test on Structure Skills; Developing Structure Skills; The Reading-Writing Connection; Exposition Strategies—Development by Example and Process Analysis; Exposition Strategies—Development by Comparison and Contrast; Exposition Strategies—Development by Definition; Exposition Strategies—Development by Division and Classification; Exposition Strategies—Development by Cause and Effect; Developing Your Argument; Effective Description; Writing Essays Using Multiple Strategies; Writing about Literature; Writing a Paper Using Research.

F0188 Second Language Acquisition (0/3): 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 (3/0): 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 (3/0): 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.

F0500 English Etymology (0/3): The purpose of this course is to survey the tools and techniques of the science of etymology in order to: (1) document recent English loanwords into Taiwan dialects; (2) document Chinese loanwords into expatriate English in Taiwan; and (3) re-evaluate Chinese-to-English etymologies in standard dictionaries.

F0583 Alternative Teaching Methodology (0/3): Students will learn how to design teaching materials and exercises that include games, songs, and even physical activities based on these theories. They will also learn how to create a positive classroom atmosphere conducive to learning, and will be expected to create and take part in story games, storytelling, drawing, dancing and singing.

F0586 Story Cycle: Community Imagination and Imaginary Community (0/3): This course is a critical reading of representative place-based story cycles. A “story cycle,” or variously named as story chronicle, anthology novel, paranovel, or composite novel, is a collection of stories arranged by the author to be read sequentially as a whole. The unity of theme and landscape, the continuity and development of a main character, and the variety of characters and events related to the main character in a congenial place, make “story cycle” a unique narrative genre in examining the development of subjectivity and community value.

F0600 Teaching Second Language Reading (0/3): This course explores the topic of extensive reading in theory and in practice. We will have an ideal mixture of lecture and discussion about the teaching of reading in L2 classroom. We will practice extensive reading through daily reading and write reader response journals in keeping with current research on reading-writing connection. A reflective statement (reader’s reflection) of this experience is required at the end of the term in addition to a book report on the Power of Reading and three short (one-page) reports on assigned articles. A love of reading is a prerequisite for success in this course.

F0613 Introduction to Research Methods and Writing (3/0): 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.

F0741 Queering Sexuality and Identity (3/0): This course attempts to delineate the critical/cultural landscape of what has come to be termed “The Post-Gender LGBTQ Era.” Along the way, this course also hopes to re-create an intellectual and emotional scene through reading, debating, and imagining, in which we can passionately join in the powerful process of creation that often gives life to work in this arena.

F0743 Detective Stories: Repetition and Simulacrum (3/0): This course attempts to shed light on
two facets of detective stories: repetition and simulacrum. Repetition is one of the essential elements of detective stories. As a strategy to solve the mystery, the detective usually identifies himself with the criminal and repeats the path of the crime. In this sense, the relationship between the detective and the criminal, which contains a possibility of interchangeable identities, is not simply based on the act of imitation, (namely, the detective imitates the act of the criminal), but a true repetition in which repetition is necessarily differentiated from resemblance or representation, but signifies an identity, or, a simulacrum. Simulacrum, a notion which will be examined through the assigned readings of this course, disturbs the distinction of the original and its copy and bears strong connection to the notions of repetition and identity. By examining several influential discourses on repetition and simulacrum, this course offers an opportunity to explore non-traditional ways of looking at detective stories.

**T0085 Research Writing (3/0):** 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.

**F0850 On Literature and Style (3/0):** In the introductory chapter of The Object of Literature, Pierre Macherey states that “there is no more a pure literary discourse than there is pure philosophical discourse; there are only mixed discourses wherein language games that are independent in their systems of reference and their principles interact on various levels.” This statement refers to the inextricably linked relationship of literature and philosophy. This course urges students to ask: what is literature thinking about?

**Ph.D. Program**

**A1793 Second Language Acquisition and Teaching (3/0):** Theories of second language acquisition and teaching in recent decades will be introduced, discussed, and critiqued.

**A2048 Literature and Language Teaching (3/0):** 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.

**A2132 Literary Theory and Criticism I (2/0):** 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 help students become familiar with contemporary literary theories and criticism so that students of literature will not only be equipped with ideas that have shaped the contemporary scene in literary studies, but can also apply them to the reading of literary as well as social texts, especially work by Toni Morrison.

**A2133 Literary Criticism II (0/2):** This course aims to enlarge basic definitions of ecocriticism in an attempt to envision new ways of framing the interrelationship between humans, nature, and the environment.

**A2134 English Writing I (1/0):** This course prepares students to write for a variety of occasions and audiences, with emphasis on graduate level academic writing. Students will focus on matching content, argumentation, and style of writing to specific purposes and audiences.

**A2135 English Writing II (0/1):** 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 reach a more advanced level of writing.

**A2141 Introduction to Sociolinguistics (0/3):** 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.

**F0293 Ecofeminist Novels (3/0):** This course aims (1) to familiarize students with important ecofeminist theories and knowledge and (2) to apply these theories to read three novels: Frances Mayes’ *Under the Tuscan Sun*, Linda Hogan’s *Solar Storm*, and Margaret Atwood’s *Oryx and Crake*.

**F0481 Buddhism and Ecology (3/0):** This course aims to introduce students to Buddhism as a field of
religious ecology. Topics for discussion include: environmental ethics, animal rights, modified anthropocentrism, the pursuit of the big self, cosmological totality, and the cultivation of compassion as a way to raise ecological consciousness. Besides reading various Buddhist scriptures and modern essays on Buddhist response to environmental ethics, students are required to do a field study of the potential contribution of the monastic community in promoting a green society in contemporary Taiwan.

F0502 Language Testing (0/3): 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.

F0578 Studies in Oscar Wilde (0/3): This course involves a study of one of the most important minor literary figures of the fin de siècle England. The course will attempt to place Wilde’s work in context to the Pre-Raphaelite and Art for Art’s Sake movements and examine the degree to which Wilde’s homosexuality was a factor in his literary contribution.

F0602 Selected Ecological Essays (0/3): This course aims to familiarize students with the most important ecocritical theories to establish a solid foundation of theoretical approaches to ecocriticism and environmental literature. Ecocritical theories concerned with political theory, environmental ethics, ecohumanism, ecosocialism, and ecofeminism will be studied and discussed.

F0703 Snyder and Native American Literature (0/3): Louise Erdrich’s recently completed tetralogy—Tracks, Love Medicine, The Beet Queen, and The Bingo Palace—constitutes a self-consciously historical series that treats the interconnected lives of various characters on and around a fictional North Dakota Chippewa reservation from 1912 to the present. In this course, we will conduct a philosophical investigation into the nature of evil and apply it to the reading of Louise Erdrich’s novels.

F0742 North American Native Literatures (3/0): This course aims to introduce to students the most elemental and critical concerns of Native American Literatures. Divided into four components, it considers the following issues: (a) the Postmodern and the PostIndian Warrior with a focus on Gerald Vizenor (Anishnaabe, 1934- ); (b) the Vanishing Race and the Museumization of the Indian with a focus on Anna Lee Walters (Pawnee and Navajo, 1946- ); (c) the Oral Tradition and the Magical Narrative with a focus on Gordon Henry, Jr. (Anishnaabe, 1955- ); and (d) the Trickster and the Nonhuman with a focus on N. Scott Momaday (Kiowa and Navajo, 1934- ).

F0916 Psycholinguistics and Language Teaching (3/0): 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 (3/0): This course is designed to explore important statistical methods in research. These statistical methods include the t test, χ2 test, correlation, and ANOVA. Instruction will include explaining related concepts, citing instances, and exercising sample problems.

F0854 Environmental Aesthetics (3/0): Topics covered in this course range from wilderness areas, rural landscapes and countryside, to citiescapes, 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 (3/0): 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 (3/0):** 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 (3/0):** 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.

**F0883 Translating Body (3/0):** This seminar stems from the premise that translation provides an apt, if not the best, means of inquiring into the various aspects of ethical issues regarding cognitive capacity. Walter Benjamin’s translation theory will be referred to for the purpose of translating body. The concept of translation will be fine-tuned by the narratives of body while various modes of narration and configuration about body will be explored in terms of translation in this course.
DEPARTMENT OF SPANISH

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

Chairman: Lin, Sheng-bin (林盛彬)

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
Chen, Yea-hong (陳雅鴻); Perez, Francisco Luis (白方濟);
Lin, Yue-hong (林禹洪); Chen, Hsiao-chuan (陳小雀); Blanco Pena, Jose Miguel (白士清)

Associate Professors
Chang, Mou-chuen (張茂椿); Cho, Chung-hung (卓忠宏); Her, Wan-i (何萬儀); Kung, Kwo-wei (翁國威); Lin, Hui-ing (林惠瑛); Ramos, José (羅幕斯); Soang, Lih-lirng (宋麗玲)

Assistant Professors
Chang, Yun-chi (張芸綺); Garcia Martinez, Maria Antonia (賈瑪莉);
Liou, Ai-ling (劉愛玲); Tai, Yu-Fen (戴毓芬); Liu, Chen-ling (劉珍綾)

Lecturer
Rachid Lamarti (葉汐帆)

Degree Requirements

1. Requirements for a degree of B.A. in Spanish:
   Completion of 140 credits of courses, including 103 credits of required courses and 37 credits of elective Spanish courses.

2. Requirements for a Master’s degree in Spanish:
   Completion of 32 credits of courses, including 2 credits of required courses and 30 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 (2/2): This course, via group discussions, trains students to express themselves in various scenarios such as while traveling, being interviewed, etc.

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.

A1300 Spanish Audio Practice 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 is a continuation of Spanish Composition I, in which students learn how to write compositions with more complicated sentence structures, vocabulary, and grammar concepts.

A1454 Hispanic History and Geography (2/2): This course is an introduction to Spanish and Latin American history and geography, with an emphasis on special characteristics of different historical periods.

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): This course focuses on intermediate Spanish grammar as well as grammar usages presented in short statements about how to form phrases and sentences.

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.

F0241 Spanish Sentence Making Practice (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.

F0338 Spanish Culture (2/2): This course provides a study of Spanish culture that allows students to gain a general concept of the Spanish language, way of thinking, arts, society, etc.

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.

F0733 Oral Interpretation and Translation I (2/2): This is an elementary course in oral interpretation and translation. The objective is to allow students to practice basic Spanish syntax.

F0734 Oral Interpretation and Translation II (2/2): This is an intermediate course in translation skills. It aims to hone students’ skills in translation from Chinese to Spanish and vice versa.
F0738 Introduction to Latin American Literature (0/2): This course introduces students to Latin American literature up to the beginning of the 20th century, with an emphasis on the study and analysis of major trends and literary works.

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 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 the chance to develop competence in the structure and topics of Spanish literature.

Master’s Program

F0623 Methodology of Cultural Investigation (2/0): This course is designed to help students familiarize themselves with some of the most fundamental and critical concepts and practices in the field of cultural studies.

F1130 Translation in Politics and Economy (2/0): This course involves the interpretation of Spanish to Chinese and Chinese to Spanish in the field of politics and economy. It will first introduce general theories of translation and skills required in interpretation. It then guides students in practicing interpretation in a variety of contexts between Spanish and Chinese. Through practice with CDs and sound files, students will become aware of the difficulties and solutions in interpreting between Chinese and Spanish.

F0909 Translation Theory and Practice (2/0): This course introduces theories related to translation. During this course, students will learn about the role of translation in cultural and literary fields.

F0964 Translation : Spanish News (2/0): The aim of this graduate course is to train students in the skills of translating Spanish news reports. Through studying and analyzing the structure of news articles, students will acquire basic knowledge in news reporting and writing. At the same time, the
course will help students strengthen their Spanish news reading and listening abilities, and eventually improve their news writing skills.

**F0860 Literary Translation (0/2):** The objective of this course is to enhance the literary and intercultural competence of students and to develop a literary sensibility during the translation process through the tasks.

**F0411 Contemporary Artistic Movements of Spain (0/2):** This course will present the development of artistic movements in Spain and lead to an appraisal of the influence of Spanish modern thinkers.

**F1052 Hispanic Children’s Literature (2/0):** This course utilizes the theories of textual analysis, psychoanalysis and narratology to investigate a series of children’s literary works. Teaching students how to analyze literary works.

**Some Issues of the Hispanic American Culture (0/2):** This course is to know and understand some important issues of modern Hispanic American culture, in order to study in depth its historical complexity, and reality.

**Art Museums in Spain (2/0):** The aim of this course is to discuss the relationship between creating art and exhibiting it at a museum in Spain. The historical background of the museum concept will be discussed during the seminars.

**F1150 Spanish Practices and Translation of Business Management (2/0):** (1) To introduce theories and practices of business management in Spanish; (2) To explain characteristics of business management in Spanish speaking countries; (3) To interpret and practice expressions of the business administration and management in Spanish speaking countries.

**Theory and Practice in Spanish Learning (0/2):** How can Spanish Learning as second-language in the era of globalization overcome communicative instrument level and join the cultural industry? How could we make translation and trans-cultural study as a creative and cultural inspiration? This course is aimed at the professional development needs of students in the further cultural studies and those who will work in related areas such as translation, gallery, cultural center, publishing companies, etc.

**Spanish Economic and Trade Practices and Translation (0/2):**
1. To dictate the economic and trade practices in Spanish speaking countries.
2. To orientate the exercises in Spanish translation of economic and trade areas.
3. To guide the Spanish interpretations on economic and trade issues by practices and exercises.

**Translation in International Relations (0/2):** This course is about the interpretation and translation of Spanish to Chinese and Chinese to Spanish in the field of International Relations. We will introduce first the general theory of translation and the skills for interpretation. Meanwhile the professor will guide the students to understand the special terms in the articles and documents about International Relations 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 of Chinese to Spanish, and vice versa.

**Modern Literary Essay in Hispanic America (0/2):** This course introduces master’s students the knowledge and study of one of the modern literature’s central genres: the literary essay. Through reading and analysis of selected essays by various authors of modern Hispanic America, the student will acquire a thorough knowledge of their historical, social subjects, and cultural characteristics.

**Masterpieces of Spanish Novel (0/2):** This course aims to help students develop familiarity and fluency in the structure and topics of Spanish literature.
DEPARTMENT OF FRENCH

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

Chairman: Jeng, An-chyun （鄭安群）

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 DLF (Diplôme d'Études 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
Wu, Hsi-deh （吳錫德）; Yang, Shu-chuan（楊淑娟）; Boileau, Gilles （徐鵬飛）;
Liang, Zong （梁蓉）; Chang, Kuo-lei（張國蕾）

Associate Professors
Chu, Chia-jui（朱嘉瑞）; Han, Bernard （侯義如）; Hsu, Hun-hui（徐琿輝）;
Kerkalli, Mohamad （葛浩德）; Lee, Pei-wha （李佩華）; Monier, Alain （孟尼亞）; Sun, Su-er （孫素娥）; Vauthier, Pierre （喻樑）; Yu, Liang （喻樑）; Jeng, An-chyun （鄭安群）

Assistant Professor
Chen, Li-chuan（陳麗娟）; Frainais-Maitre, Marie-Julie（馬朱麗）

Degree Requirements

1. Requirements for a degree of B.A. in French:
   Completion of 140 credits of courses, including 105 credits of required courses and at least 21 credits of elective French courses.

2. Requirements for a Master’s degree in French:
   Completion of 32 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.

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.

A0429 Selected Reading in French Literature (0/2): This course offers a systematic study of French writers, with an emphasis on individual works.

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 (4/4): 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 (4/4): 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 (2/0): 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 (0/2): 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.

A0583 French Commercial Correspondence (2/0): This course aims to help students gain a basic understanding of commercial French through texts, multimedia, commercial letters, and the Internet.

A0906 French Movies 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.

**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.

**A1823 French Chanson And Culture (2/0)**: The goal of this course is to introduce in a practical way how to organize a tour for a group. The material will rely on France resources in tourism. The important matters of a travel will be introduced, as transportation, housing, eating, what to do and how to prepare a budget. A Portable Document Format (PDF) document will be released for the students and many documentaries will complete the classes.

**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.

**F0377 French History of Twentieth Century (0/2)**: This course aims to introduce the formation, the special character and the spirit of contemporary France in the 20th century, by presentations from various perspectives including political, economic, social and cultural activities.

**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 (4/4)**: 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 (4/4)**: 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 associate 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 Everyday Life and Culture in 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-French-Speaking Areas’ Literature and Language (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.

F0918 Fairy Tales of Old Quebec-Introduction (3/0): This course introduces traditional Quebecian tales, talks about original story-tellers and even offers real facts behind each tale.

F0919 Advanced French Grammar (2/0): This course deals with the development of advanced French grammar. During the class, students will practice the use of verbs in proper tenses.

F1086 French Reciting And Reading (0/2)

F1149 An Omnidirectional French Learning Course (2/0)

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)

A1553 Contemporary French Thoughts (0/2)

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 make his choice for a semester work and try to translate with direct and individual help of professor; 3) sharing of experiences through all the semester works, whole class mobilized.

F1073 Teaching Method 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.

F1074 Research on Francophony (0/3): This course studies the French-speaking countries and areas, which around the world are more than 50 countries and 200 million people reading French and listening to the French.

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)
DEPARTMENT OF GERMAN

Degree offered: B.A.

Chairman: Chung, Ying-yen (鍾英彥)

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 on 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

Professors
Chung, Ying-yen (鍾英彥); Lai, Li-show (賴麗琇); Düssel, Reinhard (狄殷豪)

Associate Professors
Wei, Jung-chih (魏榮治)

Assistant Professors
Bednarsch, Roland (羅朗); Chang, Hsiu-chuan (張秀娟); Ke, Li-Fen (柯麗芬); Holger Steidele (施侯格); Roman Halfmann (哈洛曼); Hui-Chun Cheng (鄭慧君)

2014-2015 TAMKANG UNIVERSITY CATALOG
Degree Requirements
Requirements for a degree of B.A. in German:
Completion of 140 credits of courses, including 105 credits of required courses and 35 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 (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 (4/4):** 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 (2/2):** 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.

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: Ma, Yaw-huei (馬耀輝)

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
Chen, Bo-tao (陳伯陶); Lin, Pi-shoung (林丕雄)

Professors
Tzeng, Chiou-guey (曾秋桂); Ochiai, Yuji (落合由治)

Associate Professors
Chang, Chong-ling (張瓊玲); Huang, Shu-ching (黃淑靜); Liou, Ching-huei (劉長輝);
Peng, Chuen-yang (彭春陽); Sun, Yin-hua (孫寅華); Chung, Fang-chen (鍾芳珍);
Chiueh, Pai-hua (闕百華); Ma, Yaw-huei (馬耀輝); Chiang, Wen-shun (江雯薰);
Horikoshi Kazuo (堀越和男); Lin, Chi-wen (林寄雯); Ku, Jiin-fen (顧錦芬)

Assistant Professors
Tomita Akira (富田哲); Lin, Chin-hwa (林寄雯); Tien, Shih-min (田世民);
Shih, Hsin-Yu (施信余); Wang, Mei-ling (王美玲); Liao, Yu-Ching (廖裕卿);
Lee, Tien-ju (李文茹); Uchida Yasushi (內田薫); Wang, Chia-lin (王嘉臨);
Nakamura, kanae (中村香苗); Hsu, Pei-ling (徐佩伶); Wang, Yi-Yun (王憶雲);
Wang, Tien-Pao (王天保); Kikushima Kazunori (菊島和紀); Tsai, Hsin-Yin (蔡欣吟)

Lecturers
Zhou, yao-yuan (周耀原); Chung, Tze-hsin (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:
   Completion of 142 credits of courses, including 120 credits of required courses and 22 credits of
elective physics courses.

2. Requirements for an M.A. degree:
Completion of 32 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.

A0239 History of Japan (2/2): This course traces and explains Japanese history, with a special reference to Chinese history and culture.

A0249 Japanese Rhetoric (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.

A0255 Japanese Conversation II (4/4): This course trains students to be more articulate speakers in Japanese on various topics. Students are strongly encouraged to discuss various social and personal topics in Japanese.

A0256 Japanese Conversation III (2/2): This course aims at strengthening students’ competence in listening and speaking Japanese.

A0260 Japanese Language Laboratory I (2/2): 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 Application 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 on 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 Enterprise (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.


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.
DEPARTMENT OF RUSSIAN

Degree Offered: B.A.

Chairman: Su, Shwu-yann (蘇淑燕)

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
Chang, Ching-gwo (張慶國); Su, Shwu-yann (蘇淑燕); Liu, Hwang-shing (劉皇杏)

Assistant Professors
Bourovtseva, Natalia (龔雅雪); Kuo, Hsin-yi (郭昕宜); Naydina, Tatiana (那達怡);
Cheng, Ying-ying (鄭盈盈); Zaretskaya, Svetlana (史薇塔)

Degree Requirements
Requirements for a B.A. in Russian:
Completion of 140 credits of courses, including 119 credits of required courses and 21 credits of elective courses.

Course Descriptions

Undergraduate Courses

A0466 History of Russia (2/2): This course reviews the history of the Russian state from the time of formation till the beginning of the 20th century.

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.

A0887 Russian Phonetics (2/2): Pronunciation practice of vowels, consonants, and intonation is the focus of this course.

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.

A1483 Journalistic Russian (2/2): This course focuses on practice in reading Russian journals and newspapers. It also introduces terminology and common structures used in Russian journals and newspapers.

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.

F0383 Oral Translation of Practical Russian (2/0): This course provides basic information on linguistic rules of everyday practice with a focus on administrative procedures, forms of address, everyday communication, etc.

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 I (2/2): This course focuses on teaching writing skills in accordance with the requirements of the 1st certificate level (TORFL-1).

F0762 Russian Translation (2/2): This course covers practice in translation from Russian into Chinese, including an analysis of the fundamental translation problems, peculiarities of some Russian expressions and untranslatable word structures.

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.

**F0916 Russian Classical Short Novels (2/2):** The aim of this course is to give students an understanding of the deep structure of Russian culture by reading famous Russian literary works from the ancient period, such as Pushkin and Chehov, to modern days, including works by Faustovskiy, Bulat Okudzava and Ludmila Petrushevskay.

**F0917 Russian Classical Novels and the Screen Versions (2/0):** The aim of this course is to read and discuss the most famous Russian novels during the 19th and 20th centuries: Pushkin’s “Snowstorm,” Tolstoy’s “Anna Karenina,” “War and Peace”; Dostoevskiy’s “Crime and Punishment,” “Idiot”; Bulgakov’s “Master and Margarita,” Pasternak’s “Doctor Zhivago,” etc. Film adaptations of the novels will help students to understand the lives, the characteristics and the mind of Russian people.

**F0966 Russian Audio Visual Presentation (I) (1/1):** This course emphasizes training in listening, hoping to help students pass the Russian listening test.

**F0967 Russian Audio Visual Presentation (II) (1/1):** This course emphasizes training in listening, hoping to help students pass the Russian listening test.

**F0968 Russian Play (0/1):** This course aims to help students understand the deep complexities of Russian culture by examining famous Russian dramas.
COLLEGE OF INTERNATIONAL STUDIES
COLLEGE OF INTERNATIONAL STUDIES

Dean: Wang Kao-Cheng (王高成)

Brief History

The College of International Studies was inaugurated in 1992. Its mission is to train M.A. and Ph.D. students interested in area studies and international affairs. The college consists of five graduate institutes, the Graduate Institute of European Studies, the Graduate Institute of the Americas, the Graduate Institute of International Affairs and Strategic Studies, the Graduate Institute of Asian Studies, and the Graduate Institute of China Studies. All five graduate institutes offer master’s programs. Additionally, the Graduate Institute of the Americas, the Graduate Institute of European Studies, as well as the Graduate Institute of International Affairs and Strategic Studies offer doctoral programs. Currently, no other university in Taiwan offers as extensive a range of graduate programs in area studies as Tamkang University. Indeed, Tamkang University markedly distinguishes itself in area studies.

All graduate institutes in the college are characterized by their interdisciplinary approach to scholarly study. 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 seeking to transfer credits.

The college of International Studies takes pride in its many outstanding faculty members. The college is privileged to have distinguished diplomats and former cabinet members among its faculty. 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. Beginning in December 2011, the college publishes a semi-annual journal in Chinese. The college also regularly publishes conference papers in both Chinese and English, depending on the venue. The time-honoured 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: integrate all available resources, organize the support of all in realizing our common goals, and advance the distinguishing strengths of the college.

Future Development

The College is in the process of expanding dual-degree partnership opportunities for its graduate students. Every graduate institute under the College has been offering and will continue to offer some form of English-instructed courses. The college will issue a certificate to any of its students who earn 12 credits in English-taught courses related to International Relations Theory. In general, students, upon completion of 24 credits, will have their Master’s degrees conferred upon them. The College increasingly attracts degree students from overseas and this trend is expected to continue in the future.

Course Descriptions

**A1092 International Communication (2/0):** “The Public Opinion War” has developed into a mainstream issue of war strategy study between Taiwan and Mainland China since it was created in China in 2003. Our seminar analyzes the definition and theory construction of the idea of “The Public Opinion War” with the beginning of international communication theory, citing a huge amount of practical cases of China in class to put theory into practice.

**B0230 International Economy (2/0):** The purpose of this course is to introduce basic knowledge of the relationships among East Asian countries and Japan. In the first half-semester, we discuss the regional economic development of East Asian countries and Japan. In the second half-semester we shall cover the impact of the Chinese economy in East Asia, and the new wave of bilateral integration i.e. FTA in Asia after 2000.
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.

T0130 International Relations (2/0): This course will introduce contemporary international relation theories. It covers the following three sections: theoretical content, traditional international relations and the new development of Western theories.

T0530 The UN and International Organizations (2/0): This course focuses on 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, the 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.

T0532 Geopolitics (0/3): Geopolitics refers to the analysis of geography, history, and social sciences with reference to spatial politics and patterns at various levels (from the state to international). It examines the political, economic and strategic significance of geography, where geography is defined in terms of the location, size, function, and relationships of places and resources.

T0536 Problems of World Human Rights (2/0): The International Covenant on Civil and Political Rights (ICCPR) pertains to liberal rights in human rights law. This course aims to promote the standard of ICCPR in Taiwan by examining the ICCPR and its practice and theory in Japan.

T0537 Development of Globalization (3/0): 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.

T0891 Australia and the Asia-Pacific Region (2/0): The aim of this course is to study the developmental experience of Australia and Asia-Pacific countries and their international relations. The course will be mainly conducted in English. It covers 5 parts: (1) Emergence of Australia and Changes in Foreign Policy; (2) Australia and giant countries of U.S.A., China and Japan; (3) Australia and East and Southeast Asia (esp. Indonesia); (4) Australia and the South Pacific; (5) APEC and Australia as an Asia-Pacific Regional Power.

T0892 Advanced English (0/2): This course will provide opportunities for students to further develop their four skills of reading, writing, speaking and listening.

T0953 Britain, Europe and International Relations (2/0): In 1945, Britain was victorious but exhausted, trying to project power worldwide and establish the “Welfare State” at home. In 2012 the UK is a medium ranking European power struggling to escape recession and considering its future in Europe. German is propping up the Euro zone, Islamic terrorism has replaced the Russian threat. The course operates through lectures, discussion readings of selected texts and short presentations by students. This course runs in English. Due allowance for the extra effort involved is made in allocating grades. It is not primarily a test of English language ability.

T2608 International Comparative Political System (2/0): For comparison of the political system, the setting of the comparison criteria is essential. To do so, we need to start from the determination of elements that make up the political system. It will change with the times, the difference is also seen by
each region. We have to organize the nature of political institutions in the modern state, an overview of
the evolution of political institutions, to organize our approach on setting the standard for comparison.

T2609 International Capstone Program (0/2): In a capstone program, a company proposes the
subject on management as a curriculum. Students go to each company, tackle subject achievement, and
report realistic solution. It is a place which utilizes the intellectual property of a university for a
company, and is a place which secures able human resources. It is a place which uses the result of
research for students in the actual world, and is a place which finds the existing place of work in which
operation is present. For a university, it is a place which returns the intellectual property of research
and education to society.
GRADUATE INSTITUTE OF THE AMERICAS

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

Director: Chen, Hsiao-chuan （陳小雀）

The Institute

The Institute of American Studies and the Institute of Latin American Studies, established respectively in 1973 and 1989, were integrated to form the Institute of the Americas in 2009. The Institute now offers a broader scope of academic study for the students to explore. As a unique institute among Taiwanese universities, the Institute of the Americas will maintain its tradition of training well-qualified and talented personnel, while at the same time promoting research on affairs in the West.

The MA program of the Institute provides intensive and varied courses in history, philosophy, politics, international affairs, economy, and social and cultural issues of the West Hemisphere and also offers training in diplomatic and trade affairs. Meanwhile, the Section of American Studies offers a Ph.D. program too for the students who graduated with an MA in fields related to American Studies.

Faculty

Division of American Studies

Professors
Tai, Wan-chin （戴萬欽）; Chen, Edward I-hsin （陳一新）

Associate Professor
Kleykamp, David （柯大衛）

Assistant Professor
Ji, Shun-Jie （紀舜傑）; Liu, Hsiao-Pong （劉曉鵬）

Professors Emeritus
Lee, Thomas B. （李本京）; Chen, Philip Ming （陳明）

Division of Latin-American Studies

Professor
Pérez, Francisco Luis （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
Hung, Hui, Juan （熊建成）

Degree Requirements

Division of American Studies

1. Requirements for a Master’s degree in Arts:
   Completion of 33 credits of courses. A comprehensive examination is required before the passage of the proposal review. Students are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

2. Requirements for a degree in Ph.D.:
   Completion of 30-36 credits of courses. Students are also required to pass a qualifying examination, publish at least one research paper in an academic journal, submit a written doctoral dissertation completed under the supervision of a faculty member, and pass an oral examination.
Division of Latin-American Studies

Requirements for a Master's degree in Social Sciences:
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

Division of American Studies

Master’s Program

B0114 The American Economy (0/3): This course provides a general introduction to macroeconomic theory and applies this theory to the US Economy, studying such topics as income determination, unemployment, and inflation.

B1173 The Economic Analysis of Social Issues (3/0): This course is a detailed survey of major US social issues including such things as poverty, minimum wage, health care reform, the ageing of America, discrimination, immigration, etc. All lectures and testing are in English. Students are also introduced to important US social science data bases.

I0104 American Democratic Thought (1/0): This course aims to enable Ph.D. students to understand the contending arguments of alliance theory. It trains students to understand the origins of the alliance relationship between the United States and Japan. It analyzes the relevance of their alliance to China’s rise. It covers the respective policies of the Abe government and the Obama Administration toward alliance. It emphasizes the importance of equipping students with the basic capacity for writing their doctoral dissertations. Additionally, it aims to reinforce the capacity for students in critical and independent thinking.

I0057 Twentieth Century US Politics (0/3): The first half of this course consists of an examination of US political institutions as well as the distribution of power among major political institutions. Following this, the second half of the class focuses on issues related to the political activity of individual citizens, civil rights, and interest groups.

I0091 Racism and US Foreign Affairs (0/3): This class will focus on how race and racial identities are constructed and reinforced. Moreover, by studying how racial identities shape American social institutions, the lecturer will explore the connection between America’s domestic structure and the dominant ideology of racism in relation to foreign policies.

M0216 American Foreign Policy (3/3): This course introduces theories of international relations. Students will study the origin, principles and practices, administration, policies, and historical events in policy-making from President Washington to the present. It also assesses American power and responsibility today.

T0067 Social Science Research Methods (3/0): This course trains students in research methodology of social sciences, observing social phenomena, and explaining social issues. By reading relevant materials and participating in discussions, students will develop independent study abilities.

T2661 Global Financial Markets (3/0): This course describes financial markets in easy to understand terms, providing a broad and balanced introduction to financial markets across the world. In the constantly fluctuating state of modern world finance, the course provides comprehensive, up-to-date coverage of commercial and investment banking, foreign exchange, money and bond markets, stock markets and derivatives products.

T2663 US History from 17th Century to 20th Century (3/0): This course provides a general overview of the history of the United States in chronological order. The lecturer will examine America’s early
history, and explore the cultural, political, economic and technological changes that have taken place from 17 to 20th Century.

T2664 African American History from 17th century to 20th century (3/0): This course examines the experiences of African Americans from 17th century to 1960s. The lecturer will examine cultural, political, and economic factors that shaped the black history in the United States.

T2419 American Urban Studies (0/3): This course focuses on different perspectives of history, politics, the economy and society, and explores the past, present and future of US cities.

Ph.D. Program

I0058 U.S. and International Politics (0/3): Analytical premiere on international political system and the leading role played by the US its national power, influence and managing war and peace.

I0096 Alliance Theory and U.S.-Japan Relations (0/2): This course aims to enable Ph.D. students to understand the contending arguments of alliance theory. It trains students to understand the origins of the alliance relationship between the United States and Japan. It analyzes the relevance of their alliance to China’s rise. It covers the respective policies of the Abe government and the Obama Administration toward alliance. It emphasizes the importance of equipping students with the basic capacity for writing their doctoral dissertations. Additionally, it aims to reinforce the capacity for students in critical and independent thinking.

I0099 International Regimes and Global Governance (0/3): This course is an advanced study of U.S. economic and trade policy under hegemonic stability theory. Methodology will be taught during the class so that students can learn how to write a readable term paper.

I0101 A Current Survey of the Global Economy (0/3): This course considers five key regions of the world and looks at current economic data and recent trends. These regions in the US, the EU, Japan, China, and the set of Emerging Economies.

T0272 U. S. Social Issues (0/3): The purpose of offering this course in simple and formidable: to give a critical and historical account and assessment of the culture and society in the modern times.

T0492 U.S. Foreign Policy toward East Asian Countries (3/0): This course is aimed to study the details of US political and military activities in East Asian Area.

T2674 International Cooperation Theory and International Trade (3/0): This course is an introduction of U.S. economic and trade policy under hegemonic stability theory. Methodology will be offered during the class so that students can learn how to write readable term paper. It is expected that students of the sequential courses will be able to develop a reading and writing ability as well as a creative and independent way of thinking in future studies.

T2675 The Decision-Making Process of U.S. Policy toward China (3/0): The main goal of this course is to provide students with methodology and instruments in the analysis on the general decision-making process of US foreign policy and policy toward China and Taiwan in particular, focusing on Rational Actor Model, Organization Behavioral Model, and Organization Behavioral Model and related political and international relations theories.

T2678 American Political Culture (3/0): In order to acquire capability in profound understanding and analyses on American political system, its operational model, the theories explaining empirically, one must further understand American political culture. The fundamental belief, the philosophy on human nature, the nature of state, the nature of government, the nature of power, the inalienable rights of life, liberty and pursuit of happiness… the rationale for democracy and evaluation will be the core of the course.

T2679 Advanced Research Methods for the Social Sciences (2/0): This course considers a variety of research methods in the social sciences with a heavy emphasis on the use of quantitative models applied to data. The purpose of the course is to prepare students for modeling and testing theories using real world data.
Division of Latin-American Studies

A0951 Latin American Foreign Policy and International Relations (0/3): This course presents basic international relations theories and studies Latin American countries’ foreign policies, especially with regards to the US. Course content includes figuring out the special interests of the United States in the area, 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 after the 20th century. The present situation and some important topics regarding Latin America will also be dealt with.

I0052 Literature and Politics in Latin America (0/2): This course introduces the close relationship between literature and politics in Latin America. It also focuses on a variety of essential literary texts which have had significant meanings to reflect political and social developments in Latin America through the early 20th Century to present day.

T0522 Economic and Foreign Trade Policy in Latin American Countries (0/3): This course is a general review about 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.

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.

T0603 Contemporary Latin American History (0/3): Introduction to Latin American contemporary social, economic and political history.

T0604 Ancient Latin American Civilizations (2/0): This course focuses on the basic information about ancient American cultures, including the enigma of the first Americans, three of the most advanced ancient civilizations in the Americas were those of the Mayas, the Aztecs, and the Incas, El Dorado and some minority tribes in the Amazonas jungles.

T0856 Spanish Latin American News (3/0): Introduction to the language used in the Latin American media, and to its social, economic and political content. It aims both to familiarize the student with the language of Latin American media and with the present reality of Latin America, in order to facilitate its collection of information, and its research on Latin American topics.

T0946 Populism in Latin America (0/3): This course focuses on the study of populism in Latin America. It is arranged in two major sections: first, it introduces the polysemic concept of Populism in social sciences. The second section discusses case studies, including Argentine Peronism, the Brazilian Varguismo, the Mexican Cardenismo, Venezuelan Chavism and cases from Bolivia and Ecuador.

T1419 Latin American Political System (3/0): 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.

T2344 Latin American Cultural and Social Movements (3/0): In this course, we train students in data collection regarding Latin American cultures, social movements in Latin America and the inter-relations between culture and social movements in the subcontinent. First, characteristics of the Latin American culture will be introduced. Then, we will analyze the basic concepts and theories of social movements, and finally provide some local examples to ascertain the relations between them.
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.

T2668 Trade and Economic Policies in Latin America (3/0): This course is to introduce 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.

T2669 Analysis of Latin American Cinema (2/0): An introduction to Latin American society though the cinema of that subcontinent. Latin American film is rich, diverse, and socially-oriented. Many Latin American movies deal with historical events, and with social topics, like the situation of children, ethnicity, social conflicts, religion, drug traffic, women rights, migration, etc. The values and culture of the diverse Latin American countries are also reflected in their movies. The artistic approach and techniques of the Latin American cinema are also a reflection of the culture of that area.
GRADUATE INSTITUTE OF EUROPEAN STUDIES

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

Director: Dr. Chen-Rabich, Li-juan (陳麗娟)

The Department

Established in 1971, the Graduate Institute of European Studies offers a variety of courses at the master’s level related to European integration and European Union studies on topics such as European politics, and economic and cultural affairs. From 2000, our Institute began offering Ph.D. programs in the same field as master’s degree. From 2009, our Institute set up two divisions in the fields of European Union and Slavic Studies.

Each year, there are approximately 150 students enrolled in the Institute. All of them have completed their undergraduate or graduate studies in the fields of social sciences or foreign languages.

The 10 full-time faculty members of the Institute each possess extensive academic backgrounds in international relations, law, history and philosophy. They each have individual research interests regarding European integration, the European Union and Russian social sciences. Moreover, each faculty member holds Ph.D. degrees from major European universities, such as Wien University, Bonn University, Madrid University and Moscow State University, etc.

Faculty

Professors
Tzou, Peter Chong-ko (鄒忠科); Kuo, Chiu-ching (郭秋慶); Maliavin, Vladimir (馬良文);
Pisarev, Alexander (彼薩列夫); Chen-Rabich, Li-juan (陳麗娟)

Associate Professors
Lin, Li (林立); Yuan, Renee Yi-mond (苑倚曼); Cho, Chung-hung (卓忠宏); Chang, Fu-chang (張福昌); Tsui, Lin (崔琳)

Assistant Professors
Cheng, Chin-mo (鄭欽模)

Degree Requirements

1. The Institute of European Studies offers a Master’s degree in Social Science for Division of European Union Studies.
   Requirements for a Master’s degree in Social Science:
   Students must complete 34 credits of university courses, including 15 credits of elective basic courses. They are also required to pass the qualifying examination and 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 Master’s degree in Social Science for Division of Slavic Studies.
   Requirements for a Master’s degree in Social Science:
   Students must complete 34 credits of university courses. They are also required to submit a written master’s thesis completed under the supervision of a faculty member and pass an oral examination.

3. 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 30 credits of courses, including 6 credits of elective basic courses. They are also required to have intermediate-level proficiency of a European language, pass the qualifying examination, 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

Division of European Studies

Master’s Program

T0322 European States and Economic Globalization (0/2): This course will attempt to describe economic globalization; how it challenged European countries after the 1980s; and how they developed different economic and social measures to meet such challenges.

T0547 The EU and Its Rural, Agricultural and Environmental Policy (3/0): This course firstly introduces the European Community’s initial common policy: the Common Agricultural Policy. From the Rome Treaty (1958) onward, regulations have been replaced by the common market, which is based on the free exchange of people, goods, and capital. In the second part of this course, international trade views on agricultural trade and its consequences are studied. The third part of the course examines reforms made to the CAP by the EU based on their commitment to the creation of the World Trade Organization (WTO) in 1995. Also presented is the Common Fishery Policy, including its reform and the trends of total catch and aquaculture.

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.

T0556 Introduction to EU Law (3/0): The Treaty of Lisbon was enacted on Dec 1, 2009. The EU has been fundamentally changed and become a supranational organization with a legal personality. The EU is currently a quasi state. This course aims at enhancing students’ understanding of the EU.

T0559 EU Enlargement (3/0): The purpose of this course is to introduce the cooperation of the Justice and Home Affairs in the EU. Through analysing the legal framework, development process, policy instruments and problems of the Enlargement Policy of EU, the students will hopefully have a broad understanding of the future development of the European Integration.

T0896 The British, French and German Diplomatic and Security Policies (3/0): The EU is a model of modern regionalism. It makes much progress especially after Lisbon Treaty. As a global player, it has great influence in the world politics. Besides, France, Germany and Britain, even Spain, have more influence than other member states. They struggle for the leading power. The aim of the course is to explore the CFSP and its relations with the major member states.

T1775 European Integration and the Theories (3/0): The current course introduces a series of theories of the European integration in practice. This course will outline the major topics including the positive integration of western Europe, the European consciousness, illustrate the origins of European integration, the decision-making model of the European Union (EU), and outline the EU’s common policies fields. Through this course, students will learn skills in independent research and critical thinking, which they will apply them to the field of European studies.

T2468 European Union: Institutions and Decision-Making (0/3): This seminar presents the institutions of the European Union (EU). The European Commission traditionally upholds the interests of the EU as a whole, while each national government is represented within the Council of the EU, and the European Parliament (EP) is directly elected by citizens. This “institutional triangle” of the EP, the Council of the EU and the Commission is flanked by two more institutions—the European Court of Justice and the European Court of Auditors—and five other European bodies—European Central Bank, European Economic and Social Committee, European Committee of the Regions, European Investment Bank, and European Ombudsman.

Division of Slavic Studies
A1430 Russian News Reading Selection (0/2): This course discusses the problems of mass media language. Special attention will be given to Russian newspapers, journals, and other significant materials.

T0305 A Research of Ethnic Population and Interactions in Russia (2/0): The collapse of Soviet Union is an influential event in world history of the 20th century. In addition to political and economic factors, the ethnic conflict and rising national consciousness are also important factors which led to the disintegration of USSR. The purpose of the course, on the one hand, is to help students understand the demographic and national policy during Tsar’s Russia and the Soviet-era, and explore the problems and conflicts between ethnic groups in the Russian Federation on the other hand. This course will evaluate the achievements of Putin in his two-term Presidency and his current performance as Russian premier. It will also evaluate the performance and leadership of President Medvedev.

T1367 International Relations Theories and Sino-Russian Relations (0/2): The course will review the major theories on international relations, such as alliance theories as well as negotiation theories. It will also explore the major events between Russia and China since the Nerchinsk Treaty in 1689. It covers Soviet relations with the Nationalist Chinese Government and the People’s Republic of China (PRC). Additionally, it will discuss the current relations between the Russian Federation and the PRC.

T2225 Globalization and Russia (2/0): 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.

T2511 Russian as an International Language (II) (0/3): This course examines the Russian language, including advanced vocabulary, grammar, and sentence patterns.

T0638 Traditional Russian State and Society (2/0): This course introduces the relations between Russian society and state politics, which includes social development and issues reform from the period of Kievan Rus, feudal separatism, the eighteenth century, nineteenth century to the Soviet-era.

T0913 Theories of Economic Development in Russian (3/0): The course starts from the introduction of production factors markets and moves gradually toward the discussion of development economics. Topics to be covered are economic transition and economic growth using development economic policy in the economic efficiency and economic stability.

T0608 Politics and Political Parties in Russian Federation (0/2): Students will be able to summarize concepts covered in the following topics: Russian Government and politics, Russian diplomacy.

T0615 Russian Linguistic Culturology (0/2): The main purposes of this course are: 1) to improve students’ ability of reading comprehension in Russian; 2) to make students understand Russian culture by ways of reading relevant articles.

T0924 Seminar in Russia’s International Business Management (0/3): International business in Russia consists of business transactions between parties from other countries. Examples of international business in Russia transactions include international trade and investment, international strategic management, international organization design and control, leadership and employee behavior in international business, international market, international operations management, international financial management and so on. The course will introduce the environment of the international business in Russia and the challenge of global competition.
T1429 History of Social Thought in Russia (0/3): The main objective of the course is to provide students a systematic understanding of the main trends of Russia’s social thought and the foundations of Russia’s political culture.

T1982 Russia Foreign Policy after the Cold War (0/2): This course discusses the problems of Russian policy after the Cold War, especially Russia’s relationship with Europe.

Ph.D. Program

T1775 European Integration and Theories (3/0): The current course introduces a series of theories on European integration in practice. This course will outline the major related topics, including the positive integrative of Western Europe, the democratized Eastern Europe. It will also illustrate the origins of European integration, the decision-making model of the European Union (EU), and outline the EU’s development from an economic perspective. Through this course, students will learn skills in independent research and critical thinking, which they will apply to the field of European studies.

T2466 Seminar on EU Capital Market Law (3/0): This course begins with an introduction to the general principles of the financial market, including money markets, capital markets & other financial markets. It then introduces the gradual development of financial markets. Topics to be covered include market structures, and operating instruments and their economic functions.

T0901 Europe and Comparative Civilization Study (3/0): By taking this course, students will be able to interpret in-depth issues of social thought such as the nature of society, types of society, main features of the Russian civilization, social classes in Russia and current social trends.

T0965 The Cooperation and Competition of EU, US and China (3/0): After WWII, Western Europe came to depend upon U.S. protection. However, today it has a complex relationship with the U.S. In the current age of globalization, the European Union and the U.S. have a relationship characterized by cooperation and competition. Given the US philosophy of economic neo-liberalism, over the past half century there have been many trade and economic disputes between the EU and U.S. Another issue explored in this course is how the two powers are handling the rising of China. This course analyzes the current relations between them in order to comprehend today’s political and economic situation.

T0524 The EU External Relations (0/3): This course introduces a series of theories on the European integration in practice. It outlines several major topics, including the positive integration of Western Europe, the democratized Eastern Europe, European regional organizations, the decision-making model of the European Union (EU), EU external relations, and the European Security and Defence Policy (ESDP). Through this course, students will learn skills in independent research and critical thinking, which they will apply to the field of European studies.

T0641 The EU’s Foreign Trade Policies (0/3): The course applies classical and modern theories of international trade, globalization, regionalization and international political economy to describe or define the goals and actor capabilities of the European Union as a leading global trade actor. Different theoretical conceptions on actor quality get applied and tested on empirical issues and towards certain countries and regions. Which interests guide the EU on trade negotiations, and which instruments does the EU use to reach her goals? Potentials and limitations of the EU as a (collective) trading actor shall be analyzed.

T0828 EU-Russia Relations (0/3): This course focuses on three main parts: the historical development of EU-Russia relations, the interdependence of EU-Russia relations, and discussion of the critical issues surrounding EU-Russia relations. By drawing on geopolitics and European integration theories in the area, this course will cultivate students’ basic academic ability in the field of European studies.

T0940 Colloquium on Critical Theory and Hermeneutics (0/3): The purpose of this subject is to introduce the critical theory of Jurgen Habermas and Hermeneutics of Withelm Dilthey, to help students gain an overview of the main schools of contemporary European philosophy. This course also trains students to develop abilities in dialectical analysis and an attitude of pursuing truth.
T0935 Research Method for International Relations (0/3): This course attempts to explore different approaches to international relations. These include realism, neorealism, social constructivism and historical institutionalism. In addition, globalization, soft power, economical integration etc. will also be discussed. The course will attempt to explore different approaches to international relations. They include realism, neorealism, social constructivism and historical institutionalism. In addition, globalization, soft power, and economic integration will also be discussed.
GRADUATE INSTITUTE OF ASIAN STUDIES

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

Chair: Jen, Eau-tin (任耀庭)

The Institute

Asia is an area with a long history of human activity, as well as a region characterized by diversity in culture, religion and philosophy. In recent years, with economic development, Asia has caught increasing attention from all around the world. Economic development in Asia has been accompanied by political change and democratization, which have given rise to such issues as constitutionalism, human rights, security, and economic integration, among others. Taiwan’s most important neighbours are Japan to the north and Southeast Asian countries to the south. Close ties exist among these countries, and it is vital to understand and closely examine these neighbours. Accordingly, Tamkang University established the Graduate Institute of Asian Studies which comprises two divisions: Japanese Studies and Southeast Asian Studies.

Faculty

Visiting Professor
Ishida, Mitsuyoshi (石田光義)

Professors
Hsu, Ching-hsiung (許慶雄); Tsay, Ching-lung (蔡青龍); Chen, Hurng-yu (陳鴻瑜)

Associate Professors
Jen, Eau-tin (任耀庭); Tsai, Hsi-hsun (蔡錫勳); Hu, Ching-shan (胡慶山);
Lin, Juo-yu (林若雩)

Assistant Professors
Koyama, Naonori (小山直則)

Degree Requirements

Completion of 32 credits of courses, 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

Division of Japanese Studies

I0024 The Study of Japanese Economics (2/2): 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.

I0147 Administrative Reform and Public Management (0/2): The Post Modern Era is introduced, and reforms of the modern state will be discussed. Over-concentration, regional disparities have widened under the globalization progresses. It has led to big government to implement the social welfare of Aging society. Therefore the need for new public management has been advocated. We want to gain a better understanding about reforms by the new public management on the basis of the specific cases as much as possible. (This lecture is given in Japanese.)

I0155 The Study of Japanese Trade Development (2/2): The purpose of this course is to introduce
basic knowledge of the relationship among East Asian countries and Japan. In the first semester, we discuss the International Economics Theory. The second semester we shall discuss the regional economic development of East Asian countries and Japan.

**T2110 Japanese Government (0/2):** The purpose of this study is to investigation of: 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.

**T2477 Japanese Strategic Management (2/2):** Japanese MBA.

**T2520 The Strategic Management Of Japanese Companies (2/2):** Japanese MBA.

**T2726 Innovation and Economic Growth in Japan and Asia (2/2):** The purpose of this course is to investigate economic growth and trade structure in East Asia and to examine the Growth Strategy in Japan. We approach the causes of economic growth and fluctuation from the microeconomic perspective.

**T2728 Aging Population and Economic Policy in Japan and Asia (2/2):** The purpose of this course is to investigate the impacts of free trade on the environment in East Asia. We approach the causes of East Asian environmental fluctuation in perspective of international trade theory and microeconomic theory.

**T2732 Studies on International Human Rights in Japan and Southeast Asia (2/2):** As for liberty rights in the human rights law is the International Covenant on Civil and Political Rights, shortly called ICCPR. This lesson is to promote the standard of ICCPR in Taiwan, through examining the ICCPR and the practice and theory in Japan and Southeast Asia.

**T2734 Case Studies on International Law II (2/0):** The purpose of this study is to investigation of: fundamental concept of International Law, Nation-State, recognition of states and government, divided state, right of peoples to self-determination, treaty, territory high seas, EEZ, continental shelf; problem of Japan, Asia and Taiwan, etc.

**T2735 Studies on Japan’s Security (3/3):** 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.

**T2763 Japan-Taiwan Capstone Program (2/0):** Capstone programs are research, education, and a personnel training program by collaboration of industrial, administrative and academic sectors. The company in Taiwan and Japan, a government organization, NPO, etc. offer the subject on management as a curriculum of a university, utilize the intellectual property of a university, and get a realistic business solution measure into shape. For an attendance student, it becomes a place which finds the place of work to commit by using the result of research for the business solution in the actual world.

(This lecture will be held in Japanese)

**Division of Southeast Asian Studies**

**T2636 The U.S. Japan and China’s Foreign Policy in East Asia (3/0):** This seminar wants to help students to understand all the scenarios on how to challenge the U.S., Japan and China’s policy in Pacific Asia. Particularly important is how the United States and Japan relate to China; just as some American famous scholars’ conclusion that “the central strategic challenge in East Asia” is coaxing China into a constructive, cooperative regional and global role.

**T2715 Japan and Taiwan in the Development of ASEAN Emerging Economies (3/0):** Both Japan and Taiwan try to be involved in the development of ASEAN emerging economies via ODA, FDI and other channels in order to gain economic and political benefits. This course of invited lectures will examine the strategic considerations, executive process, and output effects made by Japanese and Taiwanese governments and industries. Lecturers will include officials, managers and academicians. The course aims to bring together students of Japan and Southeast Asia specializations to a new area of inter-regional studies.
T2717 Seminar on Government and Politics in East Asia (3/0): This course examines conditions that support open markets and economic growth with a focus on the East Asian experience. How have the countries of East Asia responded to the constraints and opportunities of the world economy? The path to export-led rapid growth in Japan, Korea, China, and Southeast Asia will be compared to assess the "East Asian Miracle" and the role of state-led industrial policy. The 1990s in which Japan's growth stalled and the region went through a major Asian financial crisis will be discussed to determine policy lessons. What implications does China's emergence as economic powerhouse hold for the region and global economy?

T2720 Citizen's Status and Human Rights of Overseas Chinese in East Asia (3/0): This course will focus on the immigrant history of the Chinese in the East Asian countries. It will study the impact of Chinese on the local economic and city development. Because the arising of nationalism of Southeast Asia, it led to anti-Chinese activity in some of the countries. The Chinese faced the problems of citizenship and human rights.

T2722 Socio-Economic Development in Vietnam, Indonesia, And Philippines (3/0): VIP countries account for a half of total ASEAN population. They also receive international attention due to great potential for development. The aim of this course is to discuss the development characteristics of each country, and to indentify common development issues and challenges among 3 countries. Topics to be addressed include (1) attracting FDI for industrial upgrading and job creation, (2) facilitating nationals to take overseas employment for receiving remittances, and (3) improving human resources for pursuing life excellence.

T0384 History of Continental Southeast Asia (3/0): Continental Southeast Asia refers to Vietnam, Laos, Cambodia, Thailand, Malaysia and Singapore. These areas consist of diverse ethnic groups and cultures. The first state appeared in this region in the second century B.C. As Western powers entered the area, each of these countries – except Thailand – became the victim of colonialism. They then struggled for independence from around the time of WWII. During this period, there were frequent political upheavals that resulted in the change of leaderships and regimes. This course focuses on the history of regimes.

T0628 International Relations of Asia-Pacific (0/2): This course focuses on the change and development of power structure in Asia-Pacific since WWII, especially the cold war structure created by the United States. The purpose of the containment policy was in order to deter the spread of the Communist forces. While the confrontation between the Western power bloc and Oriental one broke out in the west Asia-Pacific, there happened the war in Indochinese peninsular. In the post-cold-war era, there appeared more prospects in economic cooperation and integration in Asia-Pacific.

I0109 Labour Situation and Socioeconomic Development in Southeast Asia (0/2): This course aims to investigate the labour market conditions and characteristics of major Southeast Asian countries. It will first examine some basic theories of the labour market mechanism in general and its structure and operation in particular. It will then turn to discussions on empirical analyses and policy issues related to major countries such as Indonesia, Vietnam, the Philippines, Thailand and Malaysia.

I0143 Seminar on Triangular Relations Among China, ASEAN and Taiwan (0/2): Under the globalization process, countries on both sides of Taiwan Strait exert all their strength to run good relation with their neighbor countries. There is no relationship between Taiwan and any one of ASEAN member country up to now, therefore take part in two-track diplomacy activities could be an effective way to win those international and regional organizations with Asia relationship. Using ASEAN organization to be the core contents of course, a current international and regional important point, it has serious and important influences to Asia and Taiwan. The course will progress from easy to difficult step by step. It can make student understand whole surface interactive relations of politics and economics among China, ASEAN and Taiwan areas. Seminar will invite speakers who are or have been the accredited representatives in southeast Asia countries or ambassadors being accredited by countries of Southeast Asia according their personal work experience and qualifications to introduce triangular relations among China, ASEAN and Taiwan. Contents include Politics, Economics, Sociology, Culture, and so on.
T0370 Seminar on the Philippines (0/2): The political system of the Philippines was influenced by the United States, its religion and culture was melt with Spanish and American characters. In the way of democratization, the Philippines are suffering with negative syndromes of the developing countries, such as corruption, declining efficiency, booming crime, guerilla activities of the New People’s Army, secessionist movement of radical Muslim groups. All these topics will be included in the course.

T1414 FTA Trend and Asian Integration (0/2): This course will outline the main trends, prospects, and challenges associated with the rapid spread of Asian FTAs, and provides new evidence on FTA use from firm surveys, analysis of agreements, and CGE results. The tutor also considered political economy issues associated with FTA consolidation in Asia, and various competing proposals. The evidence highlights the shift in Asia’s trade policy that has occurred since 2000. With 61 concluded agreements, FTAs are assuming more importance as a tool of commercial policy in Asia than ever before. Singapore and the region’s three largest economies have become key players of FTA activity while ASEAN as a group is emerging as the integration hub for Asia’s FTAs. Furthermore, the Asian FTAs have maintained a strong cross-regional orientation, the trade coverage of FTAs has increased, and issues other than trade liberalization—such as investment, intellectual property rights, and labor standards or mobility—have been included.

T2612 International Labour Migration in SE+E Asia (0/2): The course is a graduate seminar on international migration of mainly (contract) workers and also of the talents. It consists of 3 parts: (1) theories and research methods of labour migration, (2) characteristics, determinants and consequences of labour migration in E+SE Asia, and (3) migration of contract workers from Southeast Asia to Taiwan.

Executive Master’s Program

I0024 The Study of Japanese Economics (2/2): 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.

I0155 The Study of Japanese Trade Development (2/2): The purpose of this course is to introduce basic knowledge of the relationship among East Asian countries and Japan. In the first semester, we discuss the International Economics Theory. And the second semester we shall discuss the regional economic development of East Asian countries and Japan.

T2717 Seminar On Government And Politics in East Asia (2/0): This course examines conditions that support open markets and economic growth with a focus on the East Asian experience. How have the countries of East Asia responded to the constraints and opportunities of the world economy? The path to export-led rapid growth in Japan, Korea, China, and Southeast Asia will be compared to assess the “East Asian Miracle” and the role of state-led industrial policy. The 1990s in which Japan’s growth stalled and the region went through a major Asian financial crisis will be discussed to determine policy lessons. What implications does Chinas emergence as economic powerhouse hold for the region and global economy?

T2726 Innovation And Economic Growth in Japan and Asia (2/2): The purpose of this course is to investigate economic growth and trade structure in East Asia and to examine the Growth Strategy in Japan. We approach the causes of economic growth and fluctuation from the microeconomic perspective.

T2737 Aging Population and Economic Policy in Japan and Asia (2/0): The purpose of this course is to investigate the impacts of free trade on the environment in East Asia We approach the causes of East Asian environmental fluctuation in perspective of international trade theory and microeconomic theory.

T2730 New Political Culture and Public Management (2/2): We look back upon the system of a modern state, the change of the structure of a modern state, and view the system of a future state. We master the foundation of the idea of public management first. Simultaneously, an understanding is
depend upon the theory of new public management. We would like to advance consideration based on a concrete example.

**T2111 International Organization (0/2):** The purposes of this study are: to explore national responsibility, intergovernmental organizations, non-governmental organizations, international civil servants, United Nations and JAPAN, the Security Council, ILO, WHO, the World Trade Organization, JAPAN and peacekeeping operations, the World Bank, International Monetary Fund, the European Community, European Political Cooperation, International Court of Justice, dispute settlement, and so on.

**T2420 Japanese Human Rights and Government (0/2):** The purpose of this study is to investigation of 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.

**T2587 International Marriage and Immigration of (SE) Asia (0/2):** This course is a graduate seminar on the special topic of migration through marriage. It consists of three parts: (1) theories of migration and of marriage; (2) characteristics, determinants, and consequences of marriage migration in Southeast and East Asia; (3) immigrant spouses from Southeast Asia and China to Taiwan.

**10141 Politics And Foreign Policy in South East Asia (0/2):** This course focuses on political development, governmental governance and foreign policy of greater South East Asian countries. It would not include those small countries, such as Laos, Brunei and East Timor.

**T2738 A Study of International Law and Asia (2/2):** The purpose of this study is to investigate fundamental concept of International Law, Nation-State, recognition of states and government, divided state, right of peoples to self-determination, treaty, territory high seas, EEZ, continental shelf, problem of Japan, Asia and Taiwan, etc.

**T2740 A Study of Constitution and Human Rights II (2/0):** The purpose of this study is to investigate the basic principles of constitution, fundamental human rights, freedom of thought, freedom of expression protection, the formation of the inevitability of social rights, the content of social rights, etc.

**T2743 International Labour Migration in East Asia: Trends and Policies (2/0):** The course is a graduate seminar on international migration of mainly (contract) workers and also of the talents, including professionals and the skilled, students, and working holiday takers. It consists of 3 parts: (1) theories and research methods of labour migration, (2) characteristics, determinants, policies, and consequences of labour migration in East Asia, and (3) migration of human resources to Japan and Taiwan.

**T2762 Japanese Foreign Policy (2/0):** This course introduces the evolution and development of Japanese diplomatic 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 diplomatic in the post-war era, as well as an ability to think critically, independently and internationally.
GRADUATE INSTITUTE OF CHINA STUDIES

Degree Offered: M.A.

Director: Chang, Wu-ueh (張五嶽)

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 brand new phase with close personal relationships as well as economic and trade exchange. It is now 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, the department has also offered a master’s program for extension education.

Faculty

Professors
Chao, Chun-shan (趙春山)

Associate Professors
Chang, Wu-ueh (張五嶽); Guo, Jiann-jong (郭建中); Li, Chi-keung (李志強);
Pan, Hsi-tang (潘錫堂); Yang, Ching-yao (楊景堯)

Degree Requirements

Requirements for a Master’s degree in 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

T0510 Research Methods and Writing (2/0): The purpose of this course is to introduce Area Studies Theories, China Studies and Social Studies Theories. Dissertation review involves a mid-term oral report. The proposal involves a final term oral and paper report to enhance writing ability.

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.

T1593 Basic Theories of Cultural and Education Studies (1/0): This class provides basic concepts and theories on education and culture. It includes studies on education, psychology and sociology. The approaches will be mainly theoretical, with scholarly explanation of general concepts.

I0072 World Leader and China Issues (2/0): This class is in English, but not an English class. In this class, selected speeches in Peking University and President Obama’s Speeches over the last few years will be offered to read and discuss. The main purpose is to learn about the world, education, and China issues at present day.

I0015 Theoretical Foundations of Methodologies (2/0): Theoretical foundations of Methodologies.

T2385 Mainland China’s Political Development (3/0): The purpose of this course is to analyze the
process of China’s political change by focusing on the five components of China’s political system—
culture, structure, groups, leadership, and policies. Emphasis is placed on the interplay between these
components, their type and rate of change.

T0888 Communist China’s Policy on Taiwan & Cross-Strait Relations (3/0): This course
introduces China’s policy toward Taiwan and its impact on Cross-Strait relations.

T1177 Foreign Policy & Deplorable Relationship 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.

T1481 Seminar in International Business Management (3/0): This course involves an analysis of
real-world cases to help students develop a spirit of team work by analyzing the impact of environment
on business and solving large-scale business problems.

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.

T2371 Economic Globalization and Economic Development in China (3/0): This course is designed
to cultivate students’ ability in analyzing the Chinese economy from a global perspective: understanding how China responds to globalization; understanding the impacts of China’s globalization on the global economy; understanding the internal and external economic problems of China while facing economic globalization; and finally to help students to develop abilities in analyzing the future development of the Chinese economy and globalization.

T2465 Methodology of China's Economic Research (1/0): This course provides students with a
theoretical basis and research methods for analyzing the issues of the Chinese economy. Built on these
foundations, elective economic theories covering the most important aspects of the Chinese economy
are offered for students to select as their areas of concentration for more specialized study. Theoretical
topics and their application discussed include comparative economics, transition economics,
institutional economics and development economics.

T1266 Seminar on Cross-Strait Relations (2/0): Since 1979, Cross-Strait relations can be divided
into three periods: (1) 1980s: a period of political and economic separation; (2) 1990s: a political
division and an economic exchange period; and (3) post-2000: a period of political division and
growing economic exchange. The relationship between China and Taiwan has changed several times
due to internal power conflicts and external influences from the U.S., Japan and other major powers.
This course describes the current Cross-strait relations and identifies factors behind shifts in Cross-
Strait relations.

I0014 Chinese Higher Education and World Movement (0/2): This class introduces China’s higher
education system and its students.

I0015 Theoretical Foundations of Methodologies (0/2): The foundation of research methodologies.

I0020 Selected Readings on Social Science (0/2): This class introduces important contemporary
social science issues.

T1115 A Study on the History of the Chinese Communist Party (0/2): This course is an extensive
study into the Chinese Communist Party. Emphases are on the historical background of the creation
of the Chinese Communist Party, the theoretical basis of revolution, the process of development, and
issues in analyzing major historical events. It aims to enhance graduate students’ ability to understand
the current global situation and broaden their perspectives on issues related to China.

I0016 In the FTA Era, TES’ Strategies in Management (0/2): This course is designed to help students understand Taiwanese enterprises’ investment patterns in China and other regions. Firstly, students will learn about the impact of Chinese taxes, tariffs and direct flights on Taiwanese enterprises in China. Students will also gain an in-depth understanding of investment in China by Taiwanese enterprises in the manufacturing and service sectors. The course is designed to integrate theory with practice.

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. 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 changes to economic systems, reforms of institutional arrangements for agriculture, the manufacturing industry, foreign direct investment, division of labor between Taiwan and China.

I0018 China’s Economic Model in Adjustment (0/3): This course examines the role of the Chinese government in economic development after 1979. We focus on the global role of the Chinese government after the year 2000 and especially on the 11th and 12th Five-Year economic plans in relation to the adjusting economic model.

T0803 Science & Technology Development in China & National System (0/2): China is now emerging and starts to influence the world economy dramatically. This course will emphasize on the S&T development in China, such as the formation of China’s national innovation system and the political environment for S&T development. The purpose of this course is to inform students of the change of China’s role in the world, which is arising from being a technology superpower that may challenge US leadership.

T1439 Marx and Lenin Thought (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 Chinese Marxism, the dialogue between Eastern and Western Marxism, the influence of Marxism on contemporary political, economic, social and cultural theories, as well as the Marxist challenges of globalization.

T0284 A Study on the Industrial Economy in Mainland China (0/3): This course provides students with a basis for understanding the functioning of the Chinese industrial economy. Built on these foundations, elective subjects covering the most important aspects of the Chinese 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.

T0402 A Study on China’s Reform and Open Door Policy (0/2): The purpose of this course is to discuss the motivation and main contents of communist China’s “Reform and open-door policy” as well as their impact on Chinese politics, economy, society and foreign relations. The evaluations made by scholars and observers on China’s “reform and open-door policy” will be analyzed at the end of this course.

T2412 Quantitative Methods and Applied Statistics (0/3): Quantitative research methods illustrate the statistic software of SPSS and Minitab to analyze the industrial, economical and social surveys in China. Graduate students are expected to interpret the results through the experimental design, test research hypotheses, analysis of variance, regression and trend analysis.

T1681 Research Methodology of the Cross-Strait Culture and Education (1/0): This course will introduce basic theories of education, psychology and sociology for education and cultural research in China Studies.

T1859 Mainland China’s Policy toward Taiwan (3/0): This course analyzes changes in Mainland China’s policy toward Taiwan, and its impact on Cross-Strait relations.
T2577 International and Cross-Strait Culture and Educational Issues (2/0): This class is designed to help graduate students construct a concept of “Taiwanese” by reading important papers and presenting personal views based on discussions as a mid-term report. Above all, it involves establishing habits to perceive contemporary issues of culture and education around the world based on “Taiwanese” knowledge learned from this class and its effect on Cross-Strait relations in the future.

T2579 Lecture on Taiwanese Enterprise Global Investment (2/0): This course is designed to help students better understand the Chinese investment environment; economic and industrial development in China; the current situation of Taiwanese enterprises in China; cooperation and competition in trade and investment between Taiwan and China; investment and management made by Taiwanese enterprises. Finally, it aims to help students understand the challenges and threats involved in overseas investment.

T2581 Methodology of International Business Management Research (3/0): This cause is designed to cultivate in students the following academic capacities: 1) to equip students with methodology in analyzing multinational enterprise’s investment and management; 2) to analyze the current situations of Taiwanese multinational enterprise’s investment and management in China and other Asian countries; 3) to help students to develop their capacity in design research program; collecting research data; analyzing data and the capacity of writing up their research project. Besides, this course will be taught in English, thus helping students to upgrade their English.

T2613 Policy Reform and Institutional Transition in China(3/0): China has been influencing the world economy significantly since the implementation of its policy reform in 1979. The policy reform remakes China’s 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.

T0975 Chinese Economic Development Strategies in the 12th Plan (3/0): This course helps students to understand the emerging economic power of China; to learn the factors behind the Chinese emerging; to cultivate students’ ability in analyzing the Chinese energy & Renminbi global strategies and policies and the challenges and threats these two have faced during their global progress.

T0976 A Topical Study on Mainland China’s Policy Toward Taiwan (3/0): Introduction to the china’s policy toward Taiwan and impact on the Cross-Strait Relations.

T0801 Industrial Development of Mainland China (3/0): This course provides students with a basis for understanding the functioning of the Chinese industrial economy. Built on these foundations, elective subjects covering the most important aspects of the Chinese 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.

T2031 Communist China’s Relations with its Neighbors (3/0): Throughout history—whether at peace or in conflict—China has generally placed its first priority on relations with its neighbors. This course analyzes the development of China’s relations with both its Asian neighbors and the United States and assesses the impact these developments will have on China’s security and the security and the of the Asian-pacific region.

T0620 A Study on Practical Issues of China Culture and Education (0/2): This course is general education class on China studies. Main areas include: education background, soft power, textbooks, primary education, higher education, and art, music issues.

T0926 Seminar on Cross-strait Higher Education Issues (0/3): This class is to explore hot issues on Cross Strait Higher Education. For this semester, two issues will be fully discussed. First will be the Students mobility in Asia Countries, Second will be Cross Strait Higher Education interaction. Open door policy will be mainly focused on.
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.

T1721  A Study on Cross-Strait Relation and Negotiation (0/3): To analyze the change of the Taiwan's policy toward China and it’s impact on cross-strait relations.

T1846  Methodology of Cross-Strait Political Relations (0/1): To analyze the change of the Taiwan's policy toward china and it’s impact on cross-strait relations.

T0259  China’s Issues Concerning Agriculture Countryside and Farmers (0/2): In-depth analysis of selected issues and aspects of China’s issues concerning agriculture, countryside and farmers. Topics discussed include economic development of agriculture, disparities between rural and coastal areas, business organization of township and village enterprises, social stratification and social mobility, social changes and conflict, urban and rural development, institutional changes in countryside.

T0286  Financial Development of China (0/3): 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.

T2433 Taiwanese Enterprise International Investment (0/3): This course firstly introduces the international cooperation investment theory, and changes of Asia investment environment after 2008 financial crunch. Afterward, we would look at changes of Chinese investment environment and analyzing Taiwanese Enterprise’s investment pattern in China and in other places in South East Asia. And finally, we would briefly look at the Chinese enterprises investment abroad.

T2551  Research Methodology of the Cross-Strait Economic Relations (0/1): This course provides students with a theoretical basis and research Methods for analyzing the issues of the Chinese economy. Built on these foundations, elective economic theories covering the most important aspects of the Chinese economy are offered for students to select as their areas of concentration for more specialized study. Theoretical topics and their application discussed include comparative economics, transition economics, institutional economics and development economics.

T0886  The Economic Role of the Chinese Government in Globalization (0/3): This course examines the role of the Chinese government in Chinese economic development after 1979. We will focus on the global role of the Chinese government after 2000, especially on the 11th and 12th Five Year Economic Plans, and their major economic policies and projects.

T0937  US-China and US-Taiwan Relations (0/3): This course introduces the important Issues & Topics of the US-China and US-Taiwan relations, including the political, economic, cultural & military aspects.

T2033  A Study of Communist China’s Political Institutions (0/3): The development of the Chinese political system has a unique historical background, sharing some characteristics with the Soviet model but also retaining its own features. The main goal of this course is to introduce various political institutions of Communist China in terms of different functions they perform in the political system.
GRADUATE INSTITUTE OF INTERNATIONAL AFFAIRS
AND STRATEGIC STUDIES

Degrees Offered: M.A. or M.S.S, Ph.D.

Director:  Wong, Ming-hsien (翁明賢)

The Institute
Founded in 1983, the Graduate Institute of International Affairs and Strategic Studies (GIIASS) focuses on research in international politics, international security, regional affairs, and strategy. At present, we offer both Ph.D. and master’s programs to domestic and foreign students interested in international affairs or strategic studies.

Faculty

Professors
Wong, Ming-hsien (翁明賢); Wang, Kao-cheng (王高成); Ho, Szu-yin (何思因)

Associate Professors
Shih, Cheng-chuan (施正權); Li, Da-jung (李大中)

Assistant Professors
Huang, Alexander Chieh-cheng (黃介正); York W. Chen (陳文政)

Professor Emeritus
Wei, Wou (魏萼)

Course Descriptions

Ph.D. Program

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 to 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 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, defence 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**

**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 & 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 design 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 Method 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 (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.
INTERNATIONAL MASTER’S PROGRAM IN TAIWAN AND ASIA-PACIFIC STUDIES

Degree Offered: M.A.

Director: Chen, Hsiao-chuan (陳小雀)

The Program

Founded in August 2014, this new graduate MA program is under the College of International Studies and administered by the Institute of the Americas. 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 foreign students.

The International Master's 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 requirement in 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.

Foreign 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 -- all while living in Taiwan!

Faculty

Professors
Tai, Wan-chin (戴萬欽); Wang, Kao-cheng (王高成); Chen, Hurng-yu (陳鴻瑜); Wong, Ming-hsien (翁明賢); Ho, Szu-yin (何思因); Tsay, Ching-lung (蔡青龍)

Associate Professors
Kleykamp, David (柯大衛); Li, Chi-keung (李志強); Jen, Eau-tin (任耀庭); Lin, Juo-yu (林若雩); Li, Da-jung (李大中)

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

T0134 THE THEORY OF INTERNATIONAL RELATIONS (2/0) : This course introduces the main international relations theories including the realism, neorealism, neoliberal institutionism, constructivism, globalization and decision-making theories.

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 government 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.

T2702 MAJOR FIGURES IN TAIWAN SINCE 1945 (2/0) : This course will help students have
relatively detailed knowledge about the major personalities in Taiwan after the year 1945. It will help them know better the political figures who influenced Taiwan following the retrocession of Taiwan to China from Japan till the dramatic year 1949. Additionally, it will review the contributions made by the major personalities in Taiwan since 1949. It will evaluate the leadership of several presidents in Taiwan, ROC. Additionally, it will discuss the contributions made by important political and business leaders, diplomats, scholars and artists in Taiwan.

T2073 INTERMEDIATE ECONOMICS (2/0) : This course provides a clear introduction to all the important macroeconomic concepts used in economic analysis and business. In addition, there is a general discussion of the role of government in the economy, the types of policies used to promote growth and stability, and a survey of the general theories of trade and international finance.
COLLEGE OF EDUCATION
COLLEGE OF EDUCATION

Dean: Chang, Dian-Fu (張錦富)

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 8 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, the Center for Teacher Education, and the Center for General Education and Core Curriculum.

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 acquisition, 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**

**D0035 Higher Education and University Instruction (0/2):** 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.

**D0037 Qualitative Research (3/3):** 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 (3/0):** The main purpose of this course is to help students 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.
DOCTORAL PROGRAM OF EDUCATIONAL LEADERSHIP AND TECHNOLOGY MANAGEMENT

Degrees Offered: Ph.D.

Director: Chang, Dian-Fu (張鈿富)

Faculty

Professors
Chang, Chia-i (張家宜); Chang, Dian-fu (張鈿富); Pan, Hui-Ling (潘慧玲); Yang, Ying (楊瑩); Kao, Hsun-fung (高薰芳); Shyu, Hsin-yih (徐新逸); Lee, Shih-chung (李世忠)
Ho, Li-an (何怡安); Chang, Chiung-sui (張瓊穗); Yu, Chia-cheng (游家政)
Chang, Ya-fung (張雅芳)

Associate Professors
Cheng, Yi-chia (鄭宜佳); Ku, David Tawei (顧大維); Shen, Chun-yi (沈俊毅)
Hsu, Chia-ling (徐加玲)

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 selected major at educational policy and leadership program or technology innovation and management program. Passed the qualify exam is another important requirement to be a candidate. Fulfilled the qualify exam may include satisfied two written exams or published 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 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 statistical 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.

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.

D0468 Special Topics on Digital Content Design (3/0): The course offers a broad foundation of knowledge and skills to prepare students for employment in related research and applications on e-learning and digital content design. The course content includes international perspectives, national policies, trends and latest issues in digital content design, including mobile learning and digital textbook, educational application in cloud computing, APP, game-based learning, and open educational resources (OERs), etc, as well as design guidelines and evaluation in digital content. The course is taught via a multi-disciplined approach, which includes oral and written communications, problem solving, group work, and special projects.

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.

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.

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 provide
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.

D0528 Special Topics on Total Quality Management in Education (0/3): This course explores the
contemporary knowledge and techniques of Total Quality Management (TQM) and enables students to
articulate and implement quality improvement processes in education. This course is designed to
provide an in-depth knowledge of TQM principles and practices, business excellence models, and an
understanding of how to conduct a national quality award through successful cases. Students who
complete this course will be able to critically appraise quality management techniques, and gain the
information and skills needed to implement total quality practices.

D0531 Special Topics on Policy and Governor 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.

D0532 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 focused 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.
DEPARTMENT OF EDUCATIONAL TECHNOLOGY

Degrees Offered: B.Ed., M.Ed.

Chairman: Ku, David Tawei （顧大維）

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
Lee, Shih-chung (李世忠); Shyu, Hsin-yih (徐新逸); Kao, Hsun-fung (高熏芳);
Chang, Chiung-sui (張瓊穗); Ho, Li-an (何俐安)

Associate Professors
Chen, Ching-fan (陳慶帆); Huang, Ya-ping (黃雅萍); Ku, David Tawei (顧大維)
Cheng, Yi-chia (鄭宜佳); Shen, Chun-yi (沈俊毅)

Assistant Professors
Tsai, Ping-yeh (蔡秉燁); Wu, Chun-ping (吳純萍); Lai, Ting-ling (賴婷鈴)

Degree Requirements

1. Requirements for a Bachelor in Educational Technology (B.Ed.): Students must complete at least 142 credits of course work, including university required general education (31 credits) and professional education (79 credits) of Educational Technology. Professional education provided by the Department includes required courses (58 credits) and elective courses (21 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 behavioural 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 Strategy and Technique (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.

D0198 Introduction to Distance Education (0/3): This course deals with the fundamental themes in distance instruction, with an emphasis on knowledge relevant to web-based instructional design. Planning, analysis, design, development, implementation, and evaluation of distance instruction systems will be discussed in this course.
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 softwares 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 eBook (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.

D0367 Topics on Educational Technology (3/0): This course covers various issues concerning educational technology. Each week a new topic is introduced and discussed. Students will reflect on the issues and conduct a presentation at the end of the semester.

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.

A1829 Seminar on Educational Training (3/0): This course covers the theory and practice of modern management as applied to training programs and the role and responsibilities of the training manager, including the analysis, design, implementation, evaluation, and marketing of training processes. In this course, students will be able to understand contemporary theories and methods of training as well as have the opportunities to explore authentic cases of training programs.

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 thses 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.

D0118 Seminar on E-Learning (0/3): This course focuses on current issues of e-learning. Topics include: platform of e-learning, instructional design of e-learning, professional roles of e-learning, evaluation of e-learning, teaching strategies of e-learning, trends of e-learning, and more.

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.
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, a 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 has been 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 an 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
The Institute currently has 8 full-time faculty members (5 professors and 3 assistant professors) and 1 part-time faculty member (assistant professor). The full-time faculties are as follows:

Professors
Chang, Chia-i (張家宜); Pan, Hui-Ling (潘慧玲); Wu, Ching-ji (吳清基);
Chang, Dian-fu (張鈿富); Chan, Ying (楊瑩)

Assistant Professors
Chen, June S. (陳錫珍); Nyeu, Fong-Yee (鈕方頤);
Hsueh, Ya-Ci (薛雅慈)—co-appointed with the Graduate Institute of Curriculum and Instruction

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: Courses covers two separate areas: educational research methods, and foundation courses in educational studies.

(1) Courses in Educational Research Methods

A. Required courses

D0210 Statistic 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 research.

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.

Method of Multivariate Statistical Analysis (0/2)

(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 The 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 higher education, 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 (0/2): 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.

D0512 Practice of Educational Leadership and Administration (0/1): Aligning with the course of “Educational Leadership and Administration,” this course is to provide students the practical experiences of the field. Visits, on-site observations along with guest speeches are arranged.

D0421 Study on Educational Policy (2/0): 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.

D0511 Practice of Education Policy (1/0): This course focuses on practices of education policy, especially the course will help students to understand what the policy formation or how the policy implementation in real settings of education. Visiting related institutes or organizations is the main activities in this course.

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 courses is exempted for students current working in educational institutions).

(2) Elective Courses
Courses are divided into two categories:

A. Field of Educational Policy

D0154 Educational Policy and 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.

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 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.

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.

**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 (0/2):** 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.

**D0363 Studies on Management in Cultural and Educational Industries (0/3):** This course is devoted to the exploration of the management practices in cultural and educational industries. This course is intended to provide students with understanding of concepts, techniques, issues, policy, and practices in cultural and educational industries, from both of theoretical and practical perspectives.

**D0423 Studies on Decision-making in Educational Administration (0/2):** 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 Studies on Knowledge Management in Education (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 education.

*Courses for 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 (0/2):** 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 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.

   **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)

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 The 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.

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 current working in educational institutions).

(2) Elective Courses

Courses are divided into two categories:

A. Field of Educational Policy

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 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 Studies 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.

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.

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.

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 (0/2): 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 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.

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 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.

D0363 Management in Cultural and Educational Industries (3/0): This course is devoted to the exploration of the management practices in cultural and educational industries. This course is intended to provide students with understanding of concepts, techniques, issues, policy, and practices in cultural and educational industries, from both of theoretical and practical perspectives.

D0423 Studies on Decision-making in Educational Administration (0/2): 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 Studies on Knowledge Management in Education (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 education.
GRADUATE INSTITUTE OF EDUCATIONAL PSYCHOLOGY AND COUNSELING

Degree Offered: M.Ed.

Director: Hung-Yen Angela Sung (宋鴻燕)

The Institute

In response to the increasing importance of counselling in communities, families and schools, the Graduate Institute of Educational Psychology and Counselling was established in 2002 to cultivate professional counsellors and teachers for communities, and all levels of schools and institutions. The goals of the Institute are as follows:

1. To foster prospective practitioners with the discipline of Educational Psychology and Counseling Psychology.
2. To train students with discipline and research specialization.
3. To nourish students’ discipline in interacting with settings of various levels of schools and other related agencies.
4. To enhance students’ competitiveness via incorporating studies of Educational Psychology and Counseling Psychology.
5. To integrate theory and practice in diversifying the horizons of students.
6. To prepare students with competence in their certification by the public agencies.

The curriculum places an equal emphasis on educational psychology, counselling theory, and practice. The curricular structure includes research methodologies, 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 counselling courses emphasize systematic theories and practices of psychological assessment, group dynamics, expressive arts therapy, career counselling, school counselling, family therapy, and play therapy.

The Master of Education degree requires a 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
Ko, Chih-en (柯志恩); Han, Kuei-hsiang (韓貴香)

Associate Professors
Li, Li-chun (李麗君); Yang, Ming-lei (楊明磊); Hung-Yen Angela Sung (宋鴻燕)

Assistant Professors
Lin, Shu-ping (林淑萍); Kuo, Li-Yen (郭瓈灐); Chiu, Wei-Chen (邱惟真)

Course Descriptions

Master’s Program

D0024 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 Theories of Counselling and Psychotherapy (3/0): This course covers historical and contemporary theories of counselling, advanced study of techniques, and research findings.

D0026 Counselling Practice and Techniques (3/0): This course offers an introduction to major theoretical concepts in the counselling process, as well as techniques and laboratory experience in case conceptualization and counselling skills.

D0028 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 Group Counselling (0/3): This course covers the study of group counselling methods and techniques; review of basic theories of group process; exploration of group processes through group interaction, and didactic analysis and synthesis.

D0030 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 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 Counselling 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 Counselling 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 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.

D0072 Ethical Issues of Counselling (3/0): This course presents legal and ethical concepts and issues relevant to the practice of psychology and student personnel services.

D0075 Career Counselling (0/2): This course presents methods and programs for facilitating the career development of individuals over a life time. Organization and development of activities and programs for all ages are emphasized.

D0114 Supervised Counselling Practicum (I) (2/0): In this course, students are required to fulfil 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 Counselling 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 counselling to embody the spirits of positive psychology into counselling practice.

**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 (2/0):** 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 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 Cognition Therapy (MBCT). Practicing the MBSR and MBCT techniques. Discussing the research results of MBSR and MBCT.

**D0491 Crisis and Trauma (0/2):** This course covers historical and contemporary theoretical concepts, research findings and treatment strategies of crisis and trauma.

**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: Cheng, Kuo-hua (陳國華)

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

Associate professors
Chen, Jui-kuei (陳瑞貴); Chen, Kuo-hua (陳國華), Deng, Jian-bang (鄧建邦)

Assistant professors
Chen, Chien-fu (陳建甫); Ji, Shun-jie (紀舜傑); Song, Mei-mei (宋玫玫); Peng, Li-hui (彭莉惠)

Visiting Research Fellow
Inayatullah, Sohail (蘇哈爾)

Degree Requirements
Requirements of a Master’s degree in social science.
Completion of 32 credits of courses, 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.

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 Macrowhystorians (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 Method (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 Eco-Economy and Sustainable Development (2/0): The core of this course is sustainability as opposed to economic progress. It is designed to facilitate constructive debates and provide alternative perspectives on sustainable development to ensure that present and future generations can continue to satisfy their needs.

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 Issue 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 Statistical 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.

T 8000 Thesis (0/4)
GRADUATE INSTITUTE OF CURRICULUM
AND INSTRUCTION

Degrees Offered: M. Ed.

Director: Chen, Li-hua (陳麗華)

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
Yu, Chia-cheng (游家政); Kao, Hsun-fung (高惠芳); Chen, Li-hua (陳麗華); Huang, Ru-chieh (黃儒傑);

Associate Professors

Assistant Professors
Chang, Yueh-Hsia (張月霞); Lin, Chun-Yi (林君憶); Hsueh, Ya-Ci (薛雅慈)

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.

D0260 Seminar on Curriculum Evaluation (0/3): Analysis of evaluation approaches and models
applied to curriculum or program in formal and informal educational settings is the aim. Discussions will include evaluation plan, methods of inquiry, standards and judgment, explanation and utilization, and meta-evaluation of curriculum evaluation.

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.

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.

D0441 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.

D0496 Seminar on School-Based Curriculum and Instruction (0/3): This course aims to explore the meanings, goals, and rationale of School-Based Curriculum and Instruction, as well as the policy formation and implementation effects in Taiwan. Via various case studies, students examine the strengths, weaknesses of the school programs, as well as the hindrances, effects and prospects of the program implementation. Through collaborating with partner schools, students are divided into groups to develop School-Based Curriculum unit and examine its feasibility.

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.

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 (3/0):** The course aims to develop students’ competencies in curriculum and instructional design and at the same time advance their understanding of learner-centered paradigm in the 21st century. In this course, students will explore and experience diverse instructional strategies, such as collaborative learning and problem-based learning, and reflect on their current practice to refine their curriculum design.

**D0526 Study on Digital Instruction (3/0):** This course is designed to explore the essence, strategies, implementation, and effects of digital instruction. Key issues related to digital instruction will be analyzed and discussed at the same time.

**D0543 Practicum of Curriculum Instruction (3/0):** This course aims to offer professional internship opportunities for students of curriculum and instruction. Internship opportunities include public and private educational institutes, non-profit organizations, or other places related to teaching and learning. Students will complete internship outside TKU, and share reflections in class.

**M0288 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, and so on. The teaching activities include explaining the concepts, citing instances, and exercising sample problems.
CENTER FOR TEACHER EDUCATION

Director: Ju, Huey-fang (朱惠芳)

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 26-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 40-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-winning 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
Chang, Ya-fung (張雅芳); Ko, Chih-en (柯志恩)

Associate Professors
Hsu, Chia-ling (徐加玲); Ju, Huey-fang (朱惠芳); Li, Li-chun (李麗君)

Assistant Professors
Chen, Chien-han (陳劍涵); Lin, Yi-Chun (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.

A1370 Principles and Theories of Instruction (0/2): This course covers theories and methodologies of instruction. It also examines issues of how to teach effectively and efficiently and to promote student learning.

A1412 Computers and Instruction (0/2): This course introduces various ways of applying computer technology to instruction. An online classroom is used to integrate the concept, while hands-on experience is highly emphasized.
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 Educational Sociology (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 reforms, culture, and social justice are discussed.

A1626 Theory and Practice in Counselling (0/2): 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.

A1627 Instructional Design (2/0): This course follows the process of instructional design, including analysis, design, development, and evaluation. Students need to produce their own lesson plans and work with others to develop an integrated curriculum.

A1628 Classroom Management (2/0): 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.

A1635 Educational Measurement and Evaluation (0/2): This course provides knowledge and skills in educational measurement and evaluation. It requires students to develop different types of tests based on three domains, namely, cognition, affection, and psychomotor.

A1774 Psychology of Adolescents (0/2): 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.

A2092 Special Education (2/0): 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.

D0053 Instructional Media and Operations (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.

D0054 Curriculum Development & 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.

D0061 Life Education (0/2): Ultimate concern, speculation and demarcation, and exploring life possibilities are the three sections that make up this course. Love, compassion and spiritual intelligence are the main goals.

D0146 Secondary School Internship (2/0): 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.

D0266 Research of Critical Issues in Education (1) (2/0): This course aims to investigate some contemporary issues in the context of education, such as educational reform, school management, autonomy, equity, social values, etc.
D0302 Research on Critical Issues in Education (2/0): This course introduces learning strategies and reading comprehension strategies that help enhance students’ professional knowledge. Students need to construct their own autobiography and resume and teaching portfolios.

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.

T9601 Professional Services in Education (0/0): This is a 40-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.

D0342 Teaching Materials and Methods in Language Arts—Chinese (0/2): This course aims to help students design subject-specific lessons with informed knowledge about their students and methods.

D0344 Teaching Materials and Methods in Language Arts—English (0/2): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0346 Teaching Materials and Methods in Mathematics (0/2): This course aims to help students learn to design subject-specific lessons with informed knowledge about their students and methods.

D0343 Practicum in Language Arts Teaching—Chinese (0/2): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0345 Practicum in Language Arts Teaching—English (0/2): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

D0347 Practicum in Mathematics Teaching (0/2): In this course, students’ pedagogical content knowledge is emphasized; and students are asked to perform micro-teaching or classroom teaching.

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.

D0536 Career Education (0/2): The goals for this course are for students to learn and apply the major career education theories. Students will also lean to integrate career counseling skills to design, apply and evaluate comprehensive career guidance programs into classroom management practice.

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.

D0540 Field Experience (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.

D0538 Emerging Learning Technologies Applications (2/0): 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 Education (2/0): This course introduces several critical topics in education. Topics include environmental education, financial education, ocean education, art education, media literacy education, multicultural education, etc.
COLLEGE OF GLOBAL DEVELOPMENT
COLLEGE OF GLOBAL DEVELOPMENT

Dean: Liou, Ay-hwa Andy (劉艾華)

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 freshmen majoring in ELC. It aims to develop students’ reading and writing ability, helping them to gain competency in critical thinking and communicative skills. Throughout the course, my hope is that we 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 GEPT at three levels, informing students about the differences between GEPT and TOEFL, and sharing test taking and preparation strategies.

A1376 Ability of Expression in Spoken and Written Chinese (3/0): 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.

H0009 Introduction to Computer Science (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.

H0010 Data Processing (0/2): This course provides an introduction to digital systems. Course topics in this semester include number systems, logic gates, Boolean algebra, combinational logic analysis, and analysis of sequential circuits.

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 resource 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: Wu, Shih-Jung (武士戎)

The Department

The department of Innovative Information and Technology (IIT) was established in August, 2009, and continued to provide four-year undergraduate students with both theoretical knowledge and practical expertise on not only the integration of information systems and applications but the 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 visions, 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

Associate Professors
Lei, Ying-hui (雷英暉); Lin, In-ho (林銀河); Huang, Huang-wen (黃煌文);
Wu, Shih-Jung (武士戎); Chang, Feng-Cheng (張峯誠)

Assistant Professors
Chu, Liou (朱留); Huang; Hui, Lin (惠霖); Chen, Duen-Kai (陳惇凱);
Hung, Fu- Yi (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.

2014-2015 TAMKANG UNIVERSITY CATALOG
S0439 Linear Algebra (0/3): The current course introduces linear algebra as a fundamental mathematic 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 mathematic concept and a tool for understanding more advanced courses. Cases will be introduced to present the connection of 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.
DEPARTMENT OF INTERNATIONAL TOURISM MANAGEMENT

Degree Offered: B.B.A.

Chairman: Dr. Yeh, Chien Mu (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 have 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 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 Professor
Dr. Juan, Pin-Ju (阮聘茹); Dr. Yeh, Chien Mu (葉劍木)

Assistant Professors
Dr. Chen, W. Jasmine (陳維立); Dr. Chi, Shan-Ju (紀珊如); Dr. Huang, Yung-Kuei (黃詠奎); Dr. Tung, Yi-Fan (董逸帆)

Degree Requirements

Requirements for a degree of B.B.A. in International Tourism Management:
Completion of 128 credits in courses, including 88 credits of required courses and 40 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 iBT 61, IELTS overall 5.5 or TOEIC 620.

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 (0/3): This subject is designed to discuss 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 (3/0):** 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 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.

**P0049 Travel Agency Operations Management (3/0):** This course introduces the basic concepts of travel agency and its regulations. Furthermore, marketing strategies and financial management are discussed as well. The students are required to design completed domestic and international tour packages.

**P0050 Tourism Industry Internship (0/3):** “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: Ya-chien Huang (黃雅倩)

The Department

The Department of English Language and Culture (English-Taught Program) was established in 2005 at TKU’s Lanyang Campus. One of the core missions of the department is to develop students’ multicultural awareness and nurture a global view. Not only all courses taught in English, but all students are also required to spend a year abroad studying in their junior year (third year). The campus is based on a traditional residential collegiate system that accommodates all students and staff and offers pastoral care and a holistic education. The other mission of the department is to mold students into all-rounded citizens with critical thinking skills by teaching foreign language skills and imbuing students with professional and international perspectives.

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’s or Doctoral degrees. Programs include but are not limited to (multi)cultural Studies, Communication, Linguistics, 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, computer and multimedia production, and others.

Faculty

Associate Professor
Yi-Chin Shih (施懿芹)

Assistant Professors
Jannette Wei-Ting Wang Gutierrez (王蔚婷); Chyi, Song-Ling (齊嵩齡);
Yen-Chen Chuang (莊晏甄); Ivy Haoyin Hsieh (謝顥音); Ya-chien Huang (黃雅倩); Yu-Pin Chen (陳郁彬)

Specially Appointed Assistant Professor
James Callow (柯建恩)

Degree Requirements

Completion of 128 credits of courses, including 78 credits of required courses and 50 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**

**A0756 Linguistics (2/0):** This course aims to provide students with basic core concepts of linguistics and its various applications in society.

**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.

**A0709 Biblical Literature (3/0):** The influence of the Bible on western thought is pervasive and its influence is still found today, often in films. Our three-hour course covers the entire Bible, including Old and New Testaments. However, this is not only a reading of “the Bible”. Our students will also gain an appreciation of the literary, historical, cultural, and theological issues necessary to fully understand the Bible. Course content includes a list of movies based on Bible stories and topics for discussion in class.

**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.

**P0046 Translation Practice (2/0):** Based on the translation of a variety of texts (magazines, newspapers and 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 form 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.

**T0994 Key Issues in Career Planning (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.

**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 Niebelung* and *Tristan & Isolde*.

**P0018 TV English (0/3):** This course enables students to learn English through movies and TV episodes.

**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: Pao, Cheng-hao (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 this 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 Singapore, France, Germany, and Poland.

The faculty members of the Department of Global Politics and Economics conduct research on a variety of topics, including Globalization, Political Science, International Politics & Economics, Political Economics, Regional Political and Economical Development, and Regional Studies.

Faculty
Specially Appointed Professor
Shee, Poon-kim (徐本欽)

Associate Professor
Pao, Cheng-hao (包正豪)

Assistant Professors
Cheng, Chin-mo (鄭欽模); Chou, Chih-wei (周志偉); Varga, Franck (馬為騰);
Reinhard Biedermann (鄧盛鴻); Anna Rudowska (安娜); Chou, Ying-lung (周應龍); Leong, Kar Yen (梁家恩)

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 (3/0): 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 (3/0): 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 (0/3):** The objective of this course is to offer the fundamental understanding of political concepts and theories together with some relevant experimented 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 statistic 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 done by 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 case study approach to help student 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.
## APPENDICE A:
TAMKANG’S SISTER UNIVERSITIES

<table>
<thead>
<tr>
<th>Area</th>
<th>Nation</th>
<th>Name of Institution</th>
<th>Date of Pact with TKU</th>
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<tbody>
<tr>
<td>America</td>
<td>Canada</td>
<td>Brandon University</td>
<td>1998/05/14</td>
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<tr>
<td></td>
<td>Canada</td>
<td>Athabasca University</td>
<td>2000/11/08</td>
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<td></td>
<td>U.S.A.</td>
<td>St. John’s University</td>
<td>1975/03/20</td>
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<td></td>
<td>U.S.A.</td>
<td>Washington State University</td>
<td>1977/03/27</td>
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<td></td>
<td>U.S.A.</td>
<td>University of West Florida</td>
<td>1977/10/18</td>
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<td></td>
<td>U.S.A.</td>
<td>California State University, Sacramento</td>
<td>1981/07/10</td>
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<td></td>
<td>U.S.A.</td>
<td>University of Illinois, Urbana-Champaign</td>
<td>1981/11/21</td>
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<tr>
<td></td>
<td>U.S.A.</td>
<td>Ohio University, Athens</td>
<td>1982/05/21</td>
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<td></td>
<td>U.S.A.</td>
<td>Mankato State University</td>
<td>1982/07/09</td>
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<td></td>
<td>U.S.A.</td>
<td>University of Missouri, St. Louis</td>
<td>1982/08/27</td>
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<td></td>
<td>U.S.A.</td>
<td>California State University, Northridge</td>
<td>1984/04/01</td>
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<td></td>
<td>U.S.A.</td>
<td>California State University, Fresno</td>
<td>1984/08/03</td>
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<td></td>
<td>U.S.A.</td>
<td>California State University, Chico</td>
<td>1988/08/01</td>
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<td></td>
<td>U.S.A.</td>
<td>Oklahoma City University</td>
<td>1990/12/04</td>
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<td></td>
<td>U.S.A.</td>
<td>Monterey Institute of International Studies</td>
<td>1994/06/25</td>
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<td>2000/11/08</td>
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<td>Indiana University of Pennsylvania</td>
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<td>California State University, Stanislaus</td>
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<td>U.S.A.</td>
<td>Knowledge System Institute Graduate School</td>
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<td>2006/01/20</td>
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<td>U.S.A.</td>
<td>The University of Michigan Flint</td>
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<td>University of St. Thomas</td>
<td>2006/08/01</td>
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<td>U.S.A.</td>
<td>Hawaii Pacific University</td>
<td>2006/08/11</td>
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<td></td>
<td>U.S.A.</td>
<td>San Francisco State University</td>
<td>2007/06/08</td>
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Tamkang University’s publication program supports faculty and student research. University publications include:

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<td>JASE is listed in COMPENDEX PLUS (EI) and Scopus with four issues published per year. 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). In the near future, JASE is hoped to be recognized by and included in Science Citation Index (SCI). The on-line paper submission process of JASE will be operated by ScholarOne Manuscript system of Thomson Reuters after Aug., 2014.</td>
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<th>The Journal of Education Media &amp; Library Sciences (JoEMLS)</th>
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<td>This journal is an open access, refereed and international scholarly journal, dedicated to providing easy access to research results across a wide range of media and library-related disciplines. The JoEMLS publishes manuscripts that report empirical, historical, and philosophical research with implications for librarianship as well as manuscripts that explore theoretical and practical aspects of the field. Articles are devoted to studies related to the field of library science, information science and IT, and the book trade and publishing. Subjects on instructional technology and information communication pertaining to librarianship are also documented. The JoEMLS encourages interdisciplinary authorship because, although library science is a distinct discipline, it is nevertheless a mainstream component of information science and essential to the future of InfoLibrary. The JoEMLS, published by the Tamkang University Press and co-published by the Department of Information &amp; Library Science (DILS) and Chueh Sheng Memorial Library, was formerly the Journal of Educational Media Science (September 1980-June 1982) and Bulletin of Educational Media Science (March 1970-June 1980). The JoEMLS has been a quarterly as well as a new title since September 1982, appearing in spring, summer, fall and winter issues. 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 &amp; Technology Abstract (LISTA), Library &amp; Information Sciences Abstracts (LISA), Library Literature &amp; Information Science (LLIS), Public Affairs Information Services (PAIS), Ulrich’s Periodicals Directory, H.W. Wilson Database, Scopus, and Taiwan Social Sciences Citation Index (TSSCI).</td>
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### 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 eighteen 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* (IMS) is published by the Department of Management Sciences and Decision Making. 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. IMS 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. IMS aims to elucidate the policy-making process, with an emphasis on its applications, especially on policy analysis 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 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 Science Citation Index (SCI expanded), and the Taiwan Social Science Citation Index (TSSCI).

### 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 Studies, is an interdisciplinary quarterly. Its main goal is to provide an open forum on a wide range of topics related to international relations, political economy and security in the contemporary world.

**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*. 
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APPENDICES
APPENDIX C: FACULTY

Bair, Dyi-ching, (Ph.D., Tamkang U., Taiwan, ROC), Chief Audit Executive and Associate Professor of Business Administration

Bednarsch, Roland, (Ph.D., U. of Leipzig, Germany), Assistant Professor of German

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