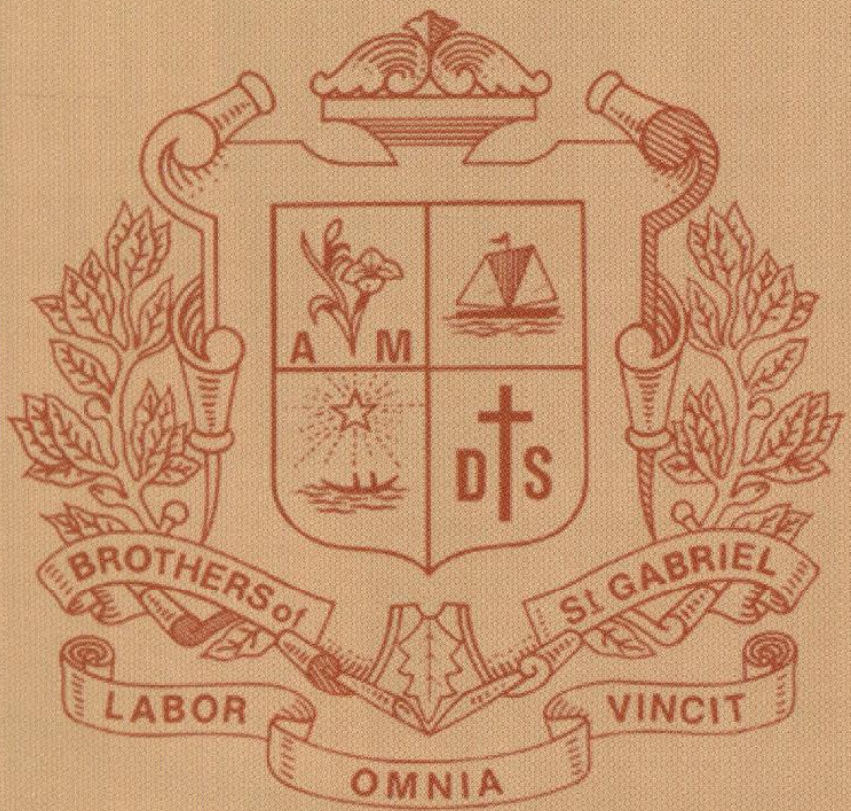

ASSUMPTION UNIVERSITY OF THAILAND
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY
Educating Intelligences and Active Minds to Change the World
www.au.edu
abac@au.edu
TRUSTED BRAND 2012
TRUSTED BRAND 2011
THAILAND TRUSTED QUALITY
assumptionuniversity
assumptionu
abacnews
abacnews
ASSUMPTION UNIVERSITY
UNDERGRADUATE
BULLETIN 2013-2014

THE ASSUMPTION UNIVERSITY LIBRARY
13 JUN 2013



Assumption University

"Educating Intelligences and Active Minds to Change the World"

Undergraduate Bulletin 2013 - 2014

Business Administration | Economics | Arts | Nursing Science | Science and Technology | Engineering
Communication Arts | Law | Biotechnology | Architecture | Music



TABLE OF CONTENTS

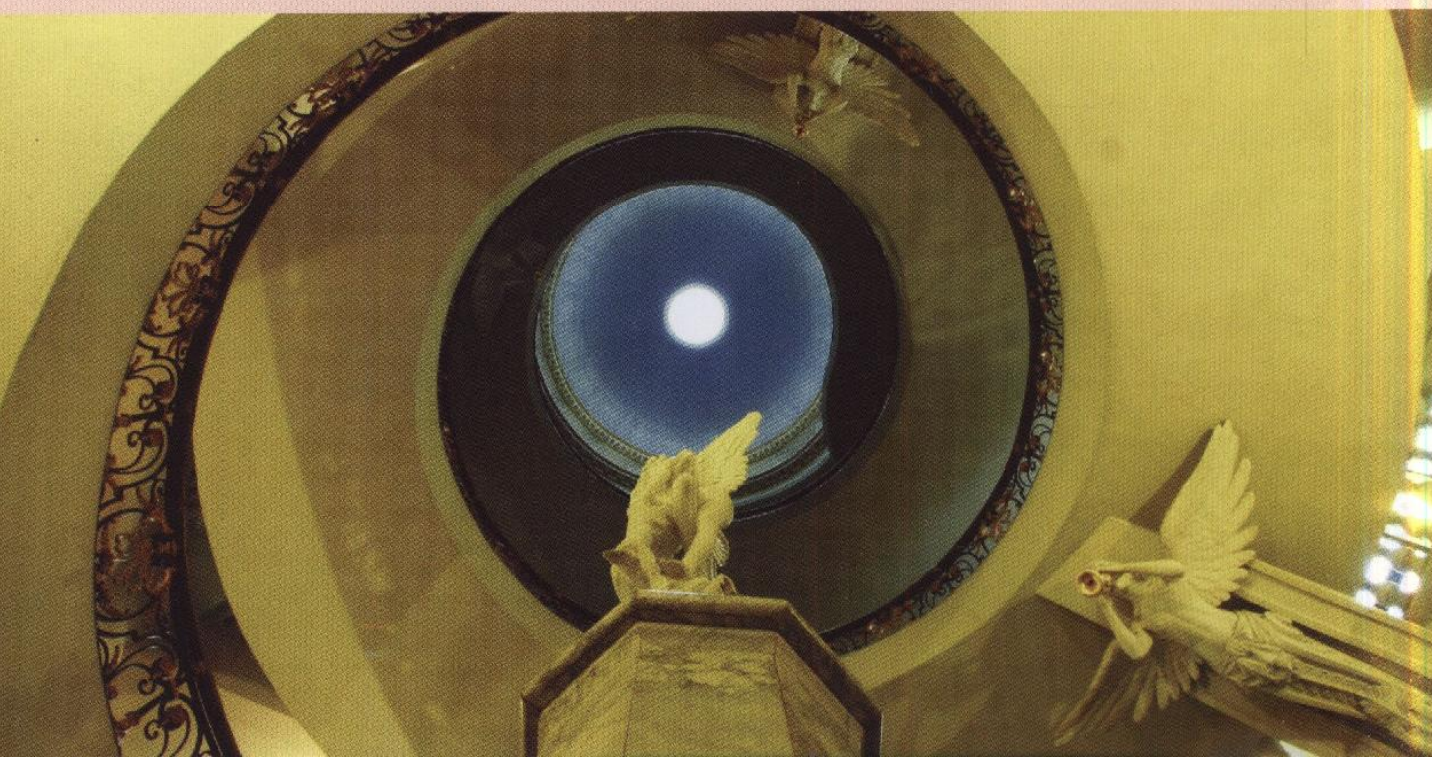
University Calendar	4
General Information	8
Motto	8
Facilities and Services	10
Admissions and Financial Information	13
Academic Information	23
Student Affairs	27
Office of International Affairs	31
Joint Program Au-Wollongong	36
Double Degree Program Au-Dominican University	38

Bachelor's Degree Programs

Matin De Tour School of Management	41
School of Arts	106
School of Music	132
School of Nursing Science	162
School of Science and Technology	170
School of Engineering	192
Albert Laurence of Communication Arts	218
School of Laws	246
School of Biotechnology	252
Montfort Del Rosario of Architecture and Design	264
Institution for English Language Education (IELE)	282
Course Description	284
Admission Schedule 2013	450

University Calendar
Academic Year 2013

Academic Year 1/2013	**Mon. May 27 – Tue. Oct. 22, 2013**
Instruction begins (1/2013)	**Mon. May 27, 2013**
Last day for late registration and adding classes, last day to withdraw without record and to have 50% of tuition fees refunded	**Mon. Jun. 10, 2013**
Submission of Mid-term Examination Papers	Mon. Jun. 17, 2013
Waikru Ceremony	Thu. Jun. 20, 2013
Application filing periods for 2/2013	Mon. Jul. 8 - Fri. Oct. 4, 2013
Last day of classes before Mid-term Examination	Sun. Jul. 14, 2013
Mid-term Examination	**Mon. Jul. 15 - Fri. Jul. 26, 2013**
Asalha Bhucha Day (Holiday - no classes)	Mon. Jul. 22, 2013
Buddhist Lent Day (Holiday - no classes)	Tue. Jul. 23, 2013
Classes resume	Sat. Jul. 27, 2013
Mid-term grades due	Fri. Aug. 9, 2013
H.M. the Queen's Birthday (Holiday - no classes)	Mon. Aug. 12, 2013
Submission of Final Examination Papers	Wed. Aug. 14, 2013
Assumption of the Blessed Virgin Mary	Thu. Aug. 15, 2013
Last day to withdraw with "W"	Fri. Sep. 6, 2013
Freshmen Enrolment (2/2013)	Wed. Sep. 11, 2013
Last Day of classes	Sun. Sep. 15, 2013
Final Examination	**Mon. Sep. 16 - Tue. Oct. 1, 2013**
Academic Advising (2/2013)	Mon. Sep. 30 - Fri. Oct. 4, 2013
Entrance Examination (2/2013)	Sat. Oct. 5, 2013
Semester ends (1/2013)	Tue. Oct. 22, 2013
King Rama V Memorial Day (Holiday)	Wed. Oct. 23, 2013
Special Session 2013	**Thu. Oct. 24 – Sat. Dec. 28, 2013**
Instruction begins (Special Session 2013)	**Thu. Oct. 24, 2013**
Last day for late registration and adding classes, last day to withdraw without record and to have 50% of tuition fees refunded	**Wed. Oct. 30, 2013**
Submission of Mid-term Examination Papers	Thu. Oct. 31, 2013
Registration for Graduation, Class of 2013	Mon. Nov. 11 - Fri. Dec. 13, 2013
Loy Kratong Day	Sun. Nov. 17, 2013
Mid-term Examination	**Mon. Nov. 18 - Tue. Nov. 19, 2013**



Classes resume	Wed. Nov. 20, 2013
Mid - term grades due	Mon. Nov. 25, 2013
Submission of Final Exam Papers	Tue. Nov. 26, 2013
H.M. the King's Birthday (Holiday - no classes)	Thu. Dec. 5, 2013
Thai Constitutions Day (Holiday - no classes)	Tue. Dec. 10, 2013
Final Examination	**Mon. Dec. 16 - Wed. Dec. 18, 2013**
Christmas Eve	Tue. Dec. 24, 2013
Christmas Day (Holiday - no classes)	Wed. Dec. 25, 2013
Semester Ends	Sat. Dec. 28, 2013
New Year's Eve (Holiday - no classes)	Tue. Dec. 31, 2013
New Year's Day (Holiday - no classes)	Wed. Jan. 1, 2014

Academic Year 2/2013

Mon. Jan. 6 – Fri. May 30, 2014

Instruction Begins (2/2013)	**Mon. Jan. 6, 2014**
Last day for late registration and adding classes, last day to withdraw without record and to have 50% of tuition fees refunded	**Fri. Jan. 17, 2014**
Commencement Exercises	Sat. Jan. 25, 2014
Submission of Final Examination Papers	Mon. Feb. 3, 2014
Makha Bhucha Day (Holiday - no classes)	Fri. Feb. 14, 2014
Last day of classes before Mid-term examination	Tue. Feb. 25, 2014
Mid-term Examination	**Sun. Jan. 26 - Fri. Mar. 7, 2014**
Ash Wednesday	Wed. Mar. 5, 2014
Classes resume	Sat. Mar. 8, 2014
Mid-term grade due	Mon. Mar 17, 2014
Submission of Final Examination Papers	Wed. Feb. 19, 2014
Chakri Memorial Day (Holiday - no classes)	Sun. Apr. 6, 2014
Songkran-Festival (Holiday - no classes)	Sun. Apr. 13 - Tue. Apr. 15, 2014
Last Day to withdraw with "W"	Fri. Apr. 18, 2014
Good Friday	Fri. Apr. 18, 2014
Easter Sunday	Sun. Apr. 20, 2014
Last Day of classes	Mon. Apr. 28, 2014
St. Louis Marie De Montfort Feast Day	Mon. Apr. 28, 2014
Final Examination	**Tue. Apr. 29 – Fri. May 16, 2014**
Coronation Day (Holiday)	Mon. May 5, 2014
Wisakha Bhucha Day (Holiday)	Tue. May 13, 2014

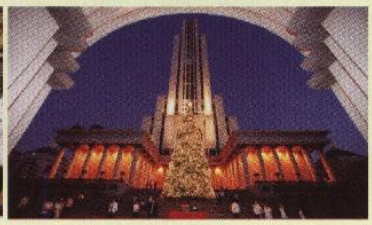






GENERAL INFORMATION





HISTORY & DEVELOPMENT

Assumption University was initially originated from Assumption Commercial College in 1969 as an autonomous higher education institution under the name of Assumption School of Business. In 1972, with the approval of the Ministry of Education, it was officially established as Assumption Business Administration College or ABAC. In May 1975, it was accredited by the Ministry of Education. In 1990, it was granted new status as "Assumption University" by the Ministry of University Affairs.

The University is a non-profit institution administered by the Brothers of St. Gabriel, a worldwide Catholic religious order, founded in France in 1705 by St. Louis Marie De Montfort, devoted to education and philanthropic activities. The congregation has been operating many educational institutions in Thailand since 1901.

The University is an international community of scholars, enlivened by Christian inspiration, engaged in the pursuit of truth and knowledge, serving the human society, especially through the creative use of interdisciplinary approaches and cybertechnology.

MOTTO: LABOR OMNIA VINCIT

PHILOSOPHY

In loyalty to its Christian mission, Assumption University stands for

- the inculcation of respect for the three institutions of the Nation Religion, Country, the King and a democratic way of life.
- the belief that a man justifies himself and his existence by the nobility of his work: LABOR OMNIA VINCIT
- the commitment to be a light that leads men towards the true source of all knowledge and life: LUX VERITAS

OBJECTIVES AND POLICIES

Assumption University exists for the main purpose of serving the nation by providing scientific and humanistic knowledge, particularly in business education and management science through research and interdisciplinary approaches.

To this end, it aims at forming intellectually competent graduates who:

- are morally sound, committed to acting justly, and open to further growth.
- appreciate freedom of expression, and are imbued with attitudes and ideologies through a carefully integrated curriculum of ethics, science, languages and business management.
- achieve academic excellence through hard work, critical thinking, and effective decision-making.

ACCREDITATION

The University is fully accredited by Commissions on Higher Education. Its graduates enjoy the privileges accorded to State University graduates. Its academic standards are accepted by the Civil Service Commission of Thailand.

Assumption University is recognized in the USA and other countries and transfer of credits from the University is accepted abroad. Graduates from the University can pursue advanced Degrees anywhere in the world. Assumption University is listed in the Handbook of Universities and other Institutions of the INTERNATIONAL ASSOCIATION OF UNIVERSITIES in Paris, France.

The University is recognized by:

- The Association of Christian Universities and Colleges in Asia (ACUCA)
- The Association of Southeast Asian Institution of Higher Learning (ASAIHL)
- The International Federation of Catholic Universities (IFCU)





MEDIUM OF INSTRUCTION

English is the officially approved medium of instruction at Assumption University. Five courses are in the Thai language but only for Thai speaking students. Students whose native tongue is not Thai follow the same courses in English.

NON-DISCRIMINATION

Assumption University does not discriminate in its programs and activities against any person because of race, color, ethnic origin, ancestry, religion, age or sex. This non-discrimination policy applies to admissions, employment, treatment of individuals, and access to programs. Inquiries concerning this policy may be directed to the Office of the Registrar.

FACILITIES AND SERVICES





CAMPUSES

Assumption University maintains two campuses: the original campus located at Hua Mak in the city, and the new campus at Suvarnabhumi, some thirty minutes from the South of the city campus and twenty minutes from Suvarnabhumi Airport on the way to the Eastern Seaboard. The original campus is a compact, vertical campus comprised of 17 buildings with the tallest having a total of 16 floors. A small lake surrounded by lush gardens and seating is a focal point of beauty and tranquility. Food, convenience, and service shops to support student needs surround the campus. This will become the home of the postgraduate faculties.

The Suvarnabhumi Campus, constructed as a "University in a Park", comprises 200 acres of a beautifully landscaped assembly of mixed architecture surrounded by lush tropical gardens and trees. Designed to host the university's undergraduate degree programs, it offers everything: a meeting/exhibition center, hotel, non-coeducational dormitories, a magnificent chapel, a museum, three academic halls, and much more. The centerpiece of the campus is the Cathedral of Learning, a 39-story tower, which houses student support services, the library, reception halls, seminar rooms and offices. Transportation between the two campuses is convenient and inexpensive. Shuttles run throughout the day between various points in Bangkok and the Suvarnabhumi Campus.

LIBRARIES

Each Assumption University campus maintains a large library with over 500,000 volumes total and periodicals. In addition to the study facilities provided for students and instructors in the main libraries, there are reading areas in many other locations. These include the Catholic Education Council library and the Catholic library.

HEATH SERVICES

Assumption University provides health services on both campuses. Students are responsible for making arrangements for their own health care, except in cases of emergency. Registered nurses are on duty Monday through Friday from 8.00 a.m. to 4.30 p.m. and are available for emergencies, first aid, and medical counseling.

Students, faculty and staff members with medical problems are encouraged to keep their files active at the Health Center regarding the nature of their problems so that appropriate action can be taken in the event of an emergency.

FOOD SERVICE AND CAFETERIAS

Catering facilities are available to faculty, staff and students throughout both campuses. Contractor-operated facilities are in operation daily from 7.00 a.m. to 8.00p.m. (Hours may change during semester breaks).

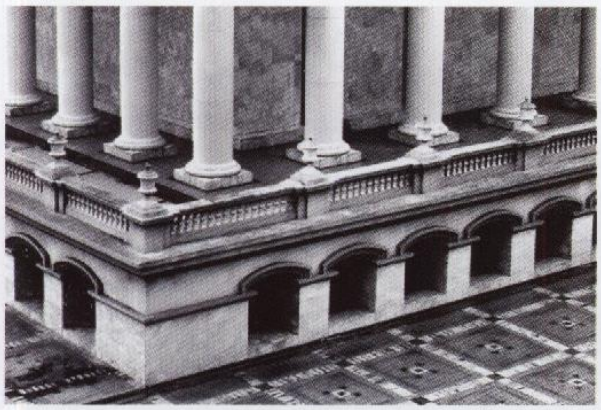
THE RESEARCH INSTITUTE ASSUMPTION UNIVERSITY (RIAU)

The Research Institute of Assumption University (RIAU), originally known as the Center for Research in Business or CRIB, has been serving the Thai business community and international corporations since it was established in 1982. Since its inception, the CRIB has continued to grow into other research areas in response to demands for services. The center began by conducting social science research and in 1993, was recognized and known as the Center for Research in Business and Social Science (CRIB & SSc.). In 1998, the center was incorporated into the Research Institute of Assumption University (RIAU). This organizational change reflects the advancement of information technology as well as the academic diversity of research work conducted by the CRIB & SSc.

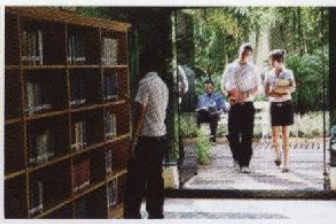
Research Services: a present, the RIAU includes four major functional areas: business research, social science research, educational research and information systems research.

COMPUTER CENTER

The Assumption University Computer Center strives to acquaint students with the use of computers as tools for working with large quantities of information in high technology environments. Its general activities are supervised by the Director of the Computer Center. In addition to supplying instruction in the use of computers to students and faculty, the Center also assists with classwork and research activities involving complex computations and intricate data processing.







PUBLICATION

The AU Press prints all of the University publications such as the AU Journal, Newsletter, etc., and offers opportunities and facilities for publication of outstanding research papers as an incentive for both faculty and students to conduct research and to publish reports.

BOOKSTORES

Bookstores on each campus provide a wide range of magazines, periodicals, educational equipment, textbooks and professional books usually not available at regular commercial bookstores. In addition, they offer a wide range of Thai style gifts for friends and visitors.

CAMPUS MINISTRY, CHAPEL AND RELIGIOUS CENTER

The Campus Ministry on each campus is designed for the Catholic community and makes use of the spacious and beautiful Chapels. The Religious Center is a multi-religion house of prayer, meditation, congregation, preaching, and for soul-searching pursuit of the true source of all knowledge and life. Space is provided for each community applying to establish a house of meditation and prayer.

SECURITY

Assumption University takes its responsibility seriously when it comes to protecting its students, its instructors and its facilities. At both campuses, teams of security staff are at every gate as well as throughout the campus to provide aid, to monitor activities and in general to provide for the well-being of everyone on campus.



ADMISSIONS AND FINANCIAL INFORMATION





ADMISSIONS

There are two modes of admission to Assumption University: transfer from an accredited university or college (see Transfer of Credits), and freshman admission. Admission to Assumption University is based on the student's personal and academic records/achievement. All available information is considered; including high school records, evidence of academic maturity and personal character, scores on standardized tests, extracurricular activities, and general
contributions to school and community.

QUALIFICATIONS

Applicants must possess:

- M.6 certificate or High School grade 12 graduation diploma and transcript.
- If I.G.C.S.E/G.C.S.E./G.C.E "O" Level graduation diploma then at least 5 subjects with grades no less than "C" is required.
- If G.C.E "A" Level then at least 3 subjects with grades no less than "E" is required.
- If G.E.D. Certificate and Diploma
- If IB certificates then at least 5 subjects with grades no less than "4".
- Minimum first year university completion certificate and transcript (For applicants that graduated from the Philippines and Myanmar only).
- Other equivalent Diploma and Certificate that must be authorized by the Ministry of Education.
- Applicants must be free from infectious diseases that can hinder their study.
- Applicants must have good manners and testify to the university that they will be attentive, make the fullest use of their capability in their study, and strictly conform to the university's rules and regulations.

DOCUMENTS AND FEES FOR APPLICATION

- A photocopy of M.6 Certificate or its equivalent.
- Two 3x4 cm. Photographs.
- Application fee of 500 Baht.
- Copy of Resident Registration (Thais Only)
- Copy of Identity Card (Thais Only)
- Copy of Passport (non-Thai)
- A copy of a name/surname change certificate, if applicable.

PLACEMENT TESTS AND INTERVIEWS

All applicants must take placement tests in English and/or Mathematics. The English placement test is given to applicants whose native language is not English and/or those for whom the primary language of instruction has not been English and who did not produce the required TOEFL and IELTS scores. Some faculties and majors require additional tests and interviews. Some faculties and majors require additional test and interviews e.g. Music, Architecture, Communication Arts, and Nursing Science. Exceptions will be made on an individual basis.

EXEMPTION

The university will consider applications with a TOEFL score of 190 (CBT), 520 (PBT), 68 (iBT) and above or an IELTS of 5.0 or SAT1 (Critical reading & writing) total score of 600 or above to be exempted from the English Placement test and English Intensive course(s). SAT1 (Mathematics) scores of 500 or above are exempted from the Mathematics Placement Test and Mathematics Intensive course or Pre-Calculus.

INTENSIVE COURSE POLICY

The university will consider applications with a TOEFL score of 500 (PBT), 70 (iBT) and above or an IELTS of 5.0 or SAT1 (Critical reading & writing) total score of 600 or above to be exempted from the English Placement test and English Intensive course(s). SAT1 (Mathematics) scores of 500 or above are exempted from the Mathematics Placement Test and Mathematics Intensive course or Pre-Calculus.

NON-THAI APPLICANTS FROM NON-THAI HIGH SCHOOL

Accepted candidates will receive an acceptance letter. They must present this letter to the Royal Thai Consulate in their home country and obtain a Non-Immigrant ED visa with a 90-day permit. Tourist visas are not acceptable. Entering Thailand without the proper visa necessitates exit and reentry.

TRANSFER OF CREDITS

Assumption University accepts transfer students provided that they are in good standing with the last institution attended, and that they meet admission standards. To insure proper processing of applications for admission, each candidate is asked to request each College or University previously attended for an official transcript and forward it to the Office of the University Registrar. The transfer of credits will be approved only under the following conditions:

- Must have at least a GPA of 2.00 out of 4.00 scale;
- The course was completed at an institution accredited by the Civil Service Commission;
- The course content is equivalent to that specified in the University's curriculum;
- The course must have been taken within 5 years prior to the time of application;
- Only a course with an earned grade of "C" or higher in a general education course or an earned grade of "B" or higher in a professional core course will be accepted as transfer credit;
- A maximum of 70 credits can be transferred. To expedite the process of transferring credits, one true copy of each previous tertiary institution's educational bulletin should be brought with the applicant.

FEES ARE AS FOLLOWS:

• Matriculation fee (Thai students)	Baht 8,900
(Non Thai students)	Baht 21,400
• Physical Check up	Baht 400
• Photograph	Baht 100
• Health Insurance (Non Thai student) (per year)	Baht 3,000
• Annual University fee	Baht 27,650
• Tuition fee (per credit hour)	
• General Education course	Baht 1,600
• Professional course	Baht 2,200
• Practicum course	Baht 2,700
• Computer and Science Lab fee (per hour)	Baht 1,100
• Intensive/Pre course (No credit/study period is Equal to credit hour)	Baht 1,600
• Computer Network (per year)	Baht 2,400
• Intensive English Textbook	Baht 2,000
• Air-condition fee (per hour)	Baht 50
• Summer Session fee	Baht 2,500

Remarks:

1. Item 1-4 are paid once only as part of Enrollment and Intensive Fees. (see table on the next page)
2. Fees are subject to change without prior notice.

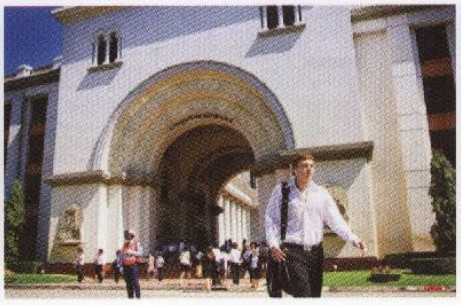
Approximate fees by semester

Faculty/Department	Enrollment and Intensive Courses Fees	Semester / Year													Total (Baht)
		1st Year			2nd Year			3rd Year			4th Year		5th Year		
		1st Semester	2nd Semester	Summer 1	1st Semester	2nd Semester	Summer 2	1st Semester	2nd Semester	Summer 3	1st Semester	2nd Semester	1st Semester	2nd Semester	
Business Administration (Marketing)	12,150-30,585	55,475	61,575	-	59,075	57,475	-	60,225	55,525	-	55,525	49,775	-	-	485,235
Business Economics	12,150-30,585	56,075	65,175	-	60,875	62,475	-	53,725	53,725	-	55,525	56,525	-	-	494,685
Arts - Business English	12,150-30,585	50,625	53,875	-	57,075	57,475	-	55,525	55,525	-	55,525	55,525	-	-	471,735
Arts - Business French	12,150-37,185	61,875	65,175	-	60,175	61,975	-	53,725	55,525	-	55,525	48,775	-	-	499,935
Arts - Business Chinese	12,150-37,185	62,575	69,025	-	61,975	63,775	-	62,275	55,525	-	55,525	51,925	-	-	519,785
Arts - Business Japanese	12,150-37,185	64,125	65,625	-	64,225	66,025	-	62,275	53,725	-	55,525	45,175	-	-	513,885
Arts - Chinese for Economy and Trade	12,150-23,985	73,875	72,875	-	72,875	72,875	-	70,725	70,725	-	65,775	59,625	-	-	583,335
Music - Music Business	12,150-33,885	75,325	73,625	-	77,625	77,625	-	73,875	60,925	9,250	54,125	54,125	-	-	590,385
Music - Music Performance	12,150-33,885	76,975	77,775	-	75,475	77,875	-	69,925	72,125	-	59,175	58,675	-	-	601,885
Nursing Science	12,150-23,985	67,025	73,325	22,200	70,625	71,925	21,550	61,675	66,325	20,000	68,275	55,075	-	-	621,985
Science and Technology (Telecom. Science)	12,150-23,985	64,075	73,825	-	78,675	69,825	-	67,575	71,775	-	70,475	64,025	-	-	584,235
Engineering (Electrical & Electronic)	12,150-23,985	87,175	76,925	-	70,175	68,675	-	63,675	59,925	-	58,675	55,275	-	-	564,485
Aeronautic Engineering - Multi-Crew Pilot	22,150-33,985	79,175	99,625	370,500	288,225	631,325	-	256,625	360,525	-	1,078,475	1,264,025	-	-	4,462,485
Aeronautic Engineering - Commercial Pilot	22,150-33,985	79,175	99,625	370,500	288,225	631,325	-	330,625	434,525	-	307,825	284,875	-	-	2,860,685
Aircraft Maintenance Engineer	22,150-33,985	104,175	121,975	-	134,975	192,975	-	225,675	347,525	-	223,475	208,475	-	-	1,593,235
Communication Arts (New Media)	13,150-24,985	62,575	59,875	-	67,925	74,225	-	70,075	68,925	4,700	60,725	70,525	-	-	564,535
Communication Arts - Visual Communication Design	21,400-39,835	67,275	69,275	-	71,075	76,975	-	65,725	59,425	4,700	63,725	64,725	-	-	582,735
Communication Arts - Computer Generated Imagery	21,400-39,835	74,525	72,275	-	80,325	80,475	-	70,725	61,475	4,700	63,425	59,975	-	-	607,735
Law	12,150-23,985	54,725	52,075	-	55,425	55,325	-	49,675	48,025	-	46,375	34,825	-	-	420,435
Biotechnology (Food Technology)	12,150-23,985	73,025	65,275	-	64,075	65,825	-	59,525	57,325	-	51,775	52,675	-	-	513,485
Biotechnology (Ago Industry)	12,150-23,985	73,025	65,275	-	64,075	65,825	-	58,525	57,325	-	51,775	52,675	-	-	512,485
Architecture	18,750-30,585	64,425	62,575	-	70,925	71,075	-	67,625	66,425	-	61,425	60,175	62,225	58,175	675,635
Interior Architecture	18,750-30,585	64,425	62,575	-	70,925	72,975	-	66,025	67,275	-	61,425	59,975	62,225	58,175	676,585
Interior Design	18,750-30,585	62,625	65,825	-	68,675	72,825	-	66,225	67,975	-	59,175	50,725	-	-	544,635
Product Design	18,750-30,585	62,625	65,825	-	71,525	68,725	-	65,175	69,775	-	57,575	50,925	-	-	542,735

Remarks:

1. Non Thai students must add 12,500 Baht to Enrolment and Intensive Course Fees to make up the difference between Matriculation amounts and are also required to pay an annual Health Insurance fee of 3,000 Baht during first enrollment.

2. Fees are subject to change without prior notice.


ADMISSION FOR PROSPECTIVE STUDENTS FROM NON-THAI HIGH SCHOOLS:

WHO CAN APPLY?

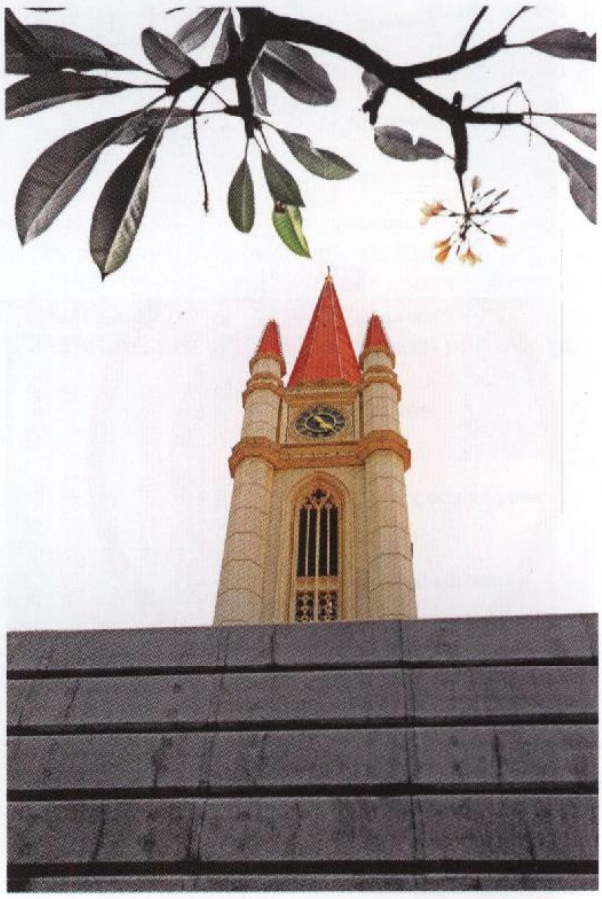
1. **Applicants with any of the following qualifications:**

- High School or grade 12 graduation diploma and transcript.
- If I.G.C.S.E/G.C.S.E./G.C.E "O" Level graduation diploma then at least 5 subjects with grades no less than "C" is required.
- If G.C.E "A" Level then at least 3 subjects with grades no less than "E" is required.
- G.E.D. Certificate and Diploma
- If IB certificates then at least 5 subjects with grades no less than "4".
- Minimum first year university completion certificate and transcript (For applicants that graduated from the Philippines and Myanmar only).
- Other equivalent Diploma and Certificate that must be authorized by the Ministry of Education**.
- Applicants must be free from infectious diseases that can hinder their study.
- Applicants must have good manners and testify to the university that they will be attentive, make the fullest use of their capability in their study, and strictly conform to the university's rules and regulations.

Remark: **
Other equivalent certificates or diplomas must be translated to English and issued or certified by their own government's Ministry of Education, Foreign Ministry, or Embassy or issued in English by their school of graduation.

2. **Applicants must be free from infectious diseases that can hinder their study.**
3. **Applicants must be able to bear all expenses related to their study.**
4. **Applicants must have good manners and testify to the university that they will be attentive, make fullest use of their capability in their study, and strictly conform to the university's rules and regulations.**

If found lacking in any of the conditions listed above, the applicant will have his or her admission declined or his or her student's status nullified immediately.







WHAT IS NEEDED TO APPLY?

- **Freshmen**

1. One copy of high school certificate or diploma or any other equivalent qualification as authorized by their country's Ministry of Education or other assigned government agency, which must be translated to English and be confirmed by their own goverment's appropriate Ministry or Embassy or issued in English by the school that issued the graduation record, diploma, or transcript.
2. High school transcripts (translated to English and get confirmed by their own Embassy or issued in English by their high school or equivalent graduated school.)
3. One copy of identification card and residence registration for Thai students and one passport copy for foreign applicants.
4. Four 3x4 cm. photos.
5. A copy of a name/surname change certificate, if applicable issued by competent authority in English.

- **Transfer Students:**

Assumption University accepts transfer students from institutions where English is the principal language of instruction. In addition to the above, transfer students must also submit:

1. Latest Official Transcript from the University/College attended; and
2. Description of courses taken from that University/College

HOW TO APPLY?

Assumption University offers four methods of application to prospective students. They are:

1. **Walk-In application:** On arrival at Assumption University (any of the university campuses) students must:

(i) Produce a Thai ID or passport and original copies of all the admission documents mentioned above.
(ii) Fill out the Admission Application form, specify the faculty/major codes, sign their name, application date and attach one 3x4 cm. photo.
(iii) Submit the Admission Application form and their documents to the Admission Center. The admission processing fee is 500 baht.

2. **Email application:** to apply via email the applicant must scan and email the admission documents mentioned above to **abac@au.edu**

(i) After assessment, the applicant will be informed via email the status of his application. If the applicant's documents are incomplete or are not in accordance with the Ministry of Education, Assumption University will ask applicants requirements, to send supplemental documents.
(ii) International students applying from abroad whose applications are approved must send a bank draft of 1,000 USD payable to "Assumption University" as a deposit fee. The aforementioned amount will be adjusted against the enrollment fee during registration. Thai and non-Thai students who have completed their high school or equivalent in Thailand are not required to send the bank draft of 1000USD in order to receive an acceptance letter





Refund policy for deposit amount

- It is non-refundable, except in case of visa rejection.
- It will be refunded in form of adjusting with the enrollment and tuition fees.

(iii) Upon the receipt of the draft along with other required documents the university will issue the student an Acceptance Letter, which will facilitate the issuance of Non-Immigrant ED Visa with a stay permit of 90 days. Applicants must produce the acceptance letter at the Royal Thai Consulate in their home country for a student visa and comply with the expected arrival date stipulated in the Acceptance Letter.

3. **Mail application:** Applicants may mail the admission documents to:

Office of the University Registrar,
592/3 Assumption University,
Soi 24 Ramkamhaeng Rd.,
Hua Mak, Bangkapi,
Bangkok 10240, Thailand

Applicants are requested to enclose a mailing address, email address, and other contact details with the admission documents.

Remarks: on approval note of the application, please refer to item 2. (i), (ii), (iii)

4. **Fax application:** applicants may fax the admission documents to +66 (2) 719.15.09.

Please provide a mailing address, email address and other contact details with the admission documents.

Remarks: on approval of the application, please refer to item 2. (i), (ii), (iii)

Note: applicants applying via email, mail or fax must present original admission documents, photographs, passport / Thai ID/ Residence Registration on arrival at Assumption University.

ADMISSION CRITERIA

1. Applicants must have graduated, or eligible to receive graduate status from their high school, and successfully completed Grade 12 or have other qualifications as stated above;
2. optional minimum test scores required:

- TOEFL score of 70 (iBT) / 500 (PBT);
- IELTS score of 5.0 and above in all bands with a validity of 2 years;
- SAT 1 (Critical reading & writing) total score of 600 or above; and
- SAT 1 (Mathematics) score of 500 or above.

Remark: the University will consider applications with a TOEFL score of 500 (PBT) / 70 (iBT) and above or an IELTS of 5.0 or SAT 1 (Critical reading & writing) total score of 600 or above to be exempted from the English Placement test and English Intensive course(s). SAT1 (Mathematics) scores of 500 or above are exempted from the mathematics placement test and Mathematics Intensive course or Pre-Calculus.

Kindly specify the score in the Application form for admission and attach copies of the official score (original required at the time of registration).

3. Transfer students

The transfer of credits will be approved only under the following conditions:

- Must have at least a GPA of 2.00 out of 4.00 scale;
- The course was completed at an accredited institution;
- The course content is equivalent to that specified in the University's curriculum;
- The course must have been taken within 5 years prior to the time of application;
- Only a course with an earned grade of "C" or higher in a general education course and an earned grade of "B" or higher in a professional core course will be accepted as transfer credit;
- A maximum 70 credits can be transferred.





PLACEMENT TESTS AND INTERVIEWS

All applicants must take placement tests in English and/or Mathematics. The English placement test is given to applicants whose native language is not English and/or whose primary language of instruction has not been English and who did not produce the required TOEFL or IELTS scores. Some faculties and majors require additional tests and interviews. Exceptions will be made on an individual basis. Some faculties and majors require additional tests and interviews.

Faculty	Department	Additional Testing / Interview Required	
Faculty of Music		Theory and History of Music	Audition
Faculty of Communication Arts	Communication arts Visual Communication Arts	Aptitude Test Part I: Design* Part II: Drawing*	Interview Interview
Faculty of Architecture		Architecture Aptitude**	
Faculty of Nursing Science		Aptitude Test	Interview

Remark: : * Use black lead pencil No. 2B or BB, color and drawing board
** Use black lead pencil No. 2B or BB

Placement Test Process
(Prospective students applying from abroad):

During the application period, students are requested to check the placement test schedule from our website and are expected to arrive in Thailand at least 2 working days prior to the test date to receive a temporary ID card and complete other necessary paperwork. Some faculties require applicants to take additional tests as shown in the chart above and applicants are advised to prepare accordingly.

On the test day, please bring your temporary ID card. The tests usually last for 2 hours for each subject and the students will be tested mainly on their proficiency and skills in certain subjects depending on the faculty/department applied for.

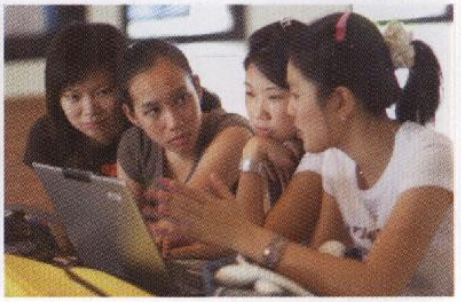
Interview Process: Not all the applicants have to face interviews though it is a must for all Communication Arts and Nursing Science Applicants. Others required to go through interviews will be informed of this requirement on their arrival and will be given on interview schedule.

Interviews usually last for 30 minutes and discussions could be on matters of personal interest or current world affairs.

Exemption
The university will consider applications with a TOEFL score of 70 (iBT) or above or IELTS of 5.0 or SAT1 (Critical reading & writing) total score of 600 or above to be exempted from the English placement test and English intensive course(s). SAT 1 (Mathematics) score of 500 or above are exempted from the Mathematics placement test and Mathematics intensive course or Pre-Calculus







INTENSIVE COURSE POLICY

Applicants who are not exempted from placement tests are required to take intensive courses to improve their knowledge in preparation to study in the University by improving their English skills, reviewing mathematics comprehension and other subjects, concerning the faculty / major to which the applicant has applied. Whenapplicants have successfully completed the intensive course(s), Assumption University will examine the results of the intensive course(s) and properly place the applicants in the appropriate classes for the June semester.

1. **Intensive English Courseis**
   is divided into 2 levels: a 60-hour course and a 120-hour course. Placement depends on the results of the English placement test.

2. **Intensive Mathematics Course is divided**
   is divided into 3 levels: a 15-hour course, a 30-hour course and a 60-hour course. Placement depends on results of the Mathematics placement test.

3. **Other Intensive Courses**
   are French, Chinese, Japanese, Creative Communication, Drawing, Architecture Preparation Workshop or Theory of Music. Courses taken depend on the applicants' academic performanc and the faculty/department applied for.







ACADEMIC INFORMATION




ACADEMIC SYSTEM

Assumption University has adopted the semester system. An academic year is divided into two semesters and a summer session. A semester lasts for approximately sixteen weeks.

- First Semester-begins in June and ends in October.
- Second Semester-begins in November and ends in March.
- Summer Session – April and May (optional).

One credit hour requires a minimum of 15 hours of class attendance; a subject involving 3 credit hours will require at least 45 hours in class. To qualify for the final examination in any subject, each student must be present for at least 80% of the class meetings. In some exceptional cases, at the discretion of the lecturer and/or the Dean of the Faculty concerned, this requirement may be waived.

NORMAL COURSE LOAD

A student's course load may vary from semester to semester. The minimum for all full-time students is four courses (12 credit hours) per semester; the maximum course load is six courses (18 credit hours) per semester. To enroll in more than six courses, written permission must be obtained from:

- The chairperson of the department concerned (if a graduating student, or junior and senior students with a cumulative G.P.A. of at least 3.25).
- In all other cases, the Dean of the Faculty con cerned must be consulted.

ATTENDANCE

Students are required to attend all classes regularly. To qualify to take a final examination for any subject, a minimum of 80% attendance is mandatory. There are no authorized cuts from classes; irregular attendance may result in exclusion from classes.Any student who finds that he/she can no longer attend a class must officially withdraw in writing through the Office of the Registrar. Failure to withdraw officially may result in a grade of "F" for the course. In case of unavoidable absence, such as subpoena requirements, illness or death of a member of the family, all work missed must be satisfactorily made up and it is the responsibility of the student to arrange for this.

WITHDRAWAL

Students may withdraw (drop) officially from a course, or all courses during the first two weeks without any penalty. Thereafter, until the final day of withdrawals as indicated in the University calendar, students will receive "W" grades. An official withdrawal must be accomplished at the Office of the Registrar by the student personally (not by someone else on his/her behalf). Failure to withdraw officially will result in a "WF" grade.

GRADING SYSTEM

Letter grades are used to show the academic standing of all students with the following meanings and values.

GRADE	MEANING	VALUE
A	Excellent	4.00
A-	Almost Excellent	3.75
B+	Very Good	3.25
B	Good	3.00
B-	Fairly Good	2.75
C+	Fair	2.25
C	Satisfactory	2.00
C-	Minimum Satisfactory	1.75
D	Poor	1.00
F	Failure	0.00
R	Course repeated later	-
S	Satisfactory	-
U	Unsatisfactory	-
W	Withdrawal with Permission	-
WF	Withdrawal with F Withdrawal from course after time limit	0
AUD	Audit and non-credit	-
I	Incomplete, used in case a student fails to complete his/her assignment within the time limit or is absent from the examination with approval from the University due to exceptional reasons.	
WP/IP	Work in progress	
NR	No Report	
TR	Transfer Credits	

Student grades are computed at the end of each semester, and may include:

- Quizzes
- Term papers
- Book reports
- Assignments
- Recitation
- Class participation
- Attendance
- Midterm and final examinations

These requirements may vary with each course.

ACADEMIC ACTION

Academic action can be both favorable and disciplinary. When a student is performing well, all action on him/her in the academic area is said to be favorable to the student. For example, when a student obtains a high GPA he/she is put on the academic List of Honors; when he/she consistently achieves very high marks, he/she is given higher honors. However, if his/her achievement is below standard, disciplinary action may be taken against him/her.

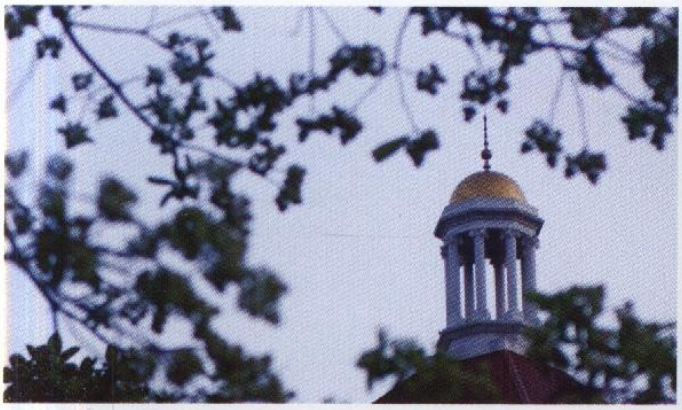
PROBATION

Students who obtain a cumulative GPA of less than 2.00 (1.99-1.50) but above the limits set for dismissal from the University will be put on probation, except during the first semester of the freshman year.

DISMISSAL

Undergraduate Students will be dismisses from the University under the following conditions:

- obtaining a cumulative GPA of less than 1.50 at the end of any semester except the first semester of the freshman year;
- obtaining a cumulative GPA of less than 1.75 for two consecutive semesters except the first semester of the freshman year;
- obtaining a cumulative GPA of les than 2.00 for four consecutive semesters except for the first semester of the freshman year. However, in certain cases, the President, in consideration of a student' s potential to improve his/her academic performance and eventually graduate, may grant special permission for the student to carry on his/her studies at the University on probation condition.





HONORS SYSTEM

The University, wishing to provide recognition to exceptional students, has established an Honors System. Undergraduate students are given awards for achievement measurable in grades beginning with semester grades and ending with cumulative grades until graduation.

GRADUATION WITH HONORS

Undergraduate students maintaining a high scholastic average are eligible for graduation with the following Honors:

Summa Cum Laude	Cumulative	GPA	3.80-4.00
Magna Cum Laude	Cumulative	GPA	3.50-3.79
Cum Laude	Cumulative	GPA	3.25-3.49

REQUIREMENTS FOR GRADUATION WITH HONORS

- Have fulfilled all the requirements for graduation within 4 years (5 years for Architecture).
- Have not been placed on probation in any condition.
- Have not received a grade lower than "C" for any course.
- Transfer students must have taken all the third and fourth year courses (or 72 credits) at Assumption University.
- Students who have graduated with a cumulative GPA of 3.25 or higher, regardless of a grade lower than "C" or "U" for non credit courses, or those who completed all requirements within 5 years of study for all 4-year undergraduate programs; and within 6 years for the Architecture program, are entitled to obtain an Award of Academic Excellence.

SPECIAL HONORS AND AWARDS

Students are given distinctions for their performance for a semester or an academic year as listed below:

- A Special Certificate of Honors from the University Council for those who obtain a 4.00 GPA for any academic year;
- A Special Certificate of Honors from the President of the University to all students who fall within the GPA range of 3.50-3.99 for any academic year;
- Students who obtain a GPA of 3.25 or above at the end of each semester will have their names published in the Academic List Honors.

Condition: 15 credits / semester required except for final semester.

Grades must be "C" or higher.



STUDENT AFFAIRS





Being committed to the educational process of student character formation, Au Student Affairs exists for the well-being of students' lives, moral and value education, and out-of-classroom learning. On the basis of individual differences and preferences, centers and divisions under Student Affairs provide a wide range of interventions and services aiming at students' growth and satisfaction. The Office of the Vice President for Student Affairs is a core unit that coordinates all Student Affairs centers and divisions.

International Center

The center is a mentor to help foreign students to settle down and adjust to Thai surroundings. Nevertheless, students will never lose their national identity during their years in Thailand. Lots of events and activities to communicate their cultural heritage to colleagues from different countries have been encouraged which in turn has led to cross - cultural awareness, mutual understanding, the appreciation of other cultures and unity in diversity among people in our multinational community. Moreover, the center is more than a location; it is a home and a cradle in which international students can seek assistance and guidance regarding accommodation, transportation, etc.

Center for Residential Life

Three residential buildings at Suvarnabhumi Campus: King David, King Solomon and Queen of Sheba that accommodate 2500 Thai and international students stand for a community of scholars who dedicate their young lives to the pursuit of knowledge. The integration of excellent facilities with Internet technology removes all worries about living conditions and allows young scholars to access sources of knowledge anywhere around the world at anytime. The Center for Residential Life consists of instructors who help make it a home for all members by providing orientation and information, giving advice and assistance when they experience difficulties and encounter problems, creating a multicultural learning environment free from prejudice and discrimination, and promoting harmonious relations and peaceful living despite differences in language and culture, and preparing developmental programs to enable students to excel.

Center for Sports and Physical Fitness

High standard sport facilities and fitness equipments reflect the university's commitment to belief in the importance of students' physical development. The center is responsible for encouraging students to access these facilities and equipment for their physical fitness through professional services and management. Free access is to guarantee that it is open for all equally. Various sport lessons and training are designed for both beginners who need sports for enhancing their physical health or those who want to become university athletes.

Center for Mental and Personality Development

The center is responsible for fostering and enhancing students' emotional growth, which is regarded as one of the four core dimensions of the total development of a human person. Professional psychologists at the center are ready to provide counseling services to not only individuals and groups, but also their families. Various proactive sessions are continually organized so as to help students know their individual selves and cope with problems and anxiety. Peer counselors are students who pass advanced training conducted by professional counselors in the center who will embed groups of students so to assure that emergent needs will be responded to and students' emotional maturity is encouraged at all levels.

Financial Aid and Scholarships Division

Assumption University is committed to the policy that "no Au students will terminate their education due to lack of financial support". The Financial Aid and Scholarships Division exist in particular to assist students who are eligible for financial assistance or scholarships during their study. The University provides several types of financial aid programs and scholarships to cover the difficulties and needs of students, which can be grouped into the following.





- Scholarship: funds from the university or other sources granted to students who fulfill the university's requirements.
- Grant: form of financial aid offered to students who are in financial difficulty.
- Loan: the financial assistance offered to students on the basis of financial needs with repayment conditions. The conditions of repayment depend on loan agreements of each of particular source which includes University loan and Government loans.

Student Rights and Discipline Division

The Student Rights and Discipline Division has a joint mission with other units in the university to develop Au students to their true potential by inculcating a sense of deliberation and upholding self-discipline that will eventually enhance their moral maturity, creating an environment that fosters opportunities for students to develop their sense of self-responsibility and self- discipline, acknowledging their personal rights and each other's, exercising freedom of choice constructively, and maintaining proper social manners. The Student Rights and Discipline Division follow a student-centered approach and uses university guidelines for discipline formation as the cornerstones of the execution of its functions. The functions of the unit are to monitor student behavior, to reform students from improper behavior, to inculcate desirable social values, to rehabilitate desirable behavior, to encourage the process of behavior change, and to maintain student welfare and security inside the campuses.

Student welfares and services

• Insurance

The division arranges Group Accident Insurance for all students and Health insurance for non- Thai students at registration each academic year. Non–Thai students who pay for health insurance fee will receive a health care card one month after registration. Students can request accident insurance compensation by filling in the relevant documents at the division. International students whose parents reside in Thailand or who have an insurance policy and do not need the university health insurance program must file an exemption request form.

• Military Services

The R.O.T.C. Program is provided for Thai students who accept military training. Students can contact the University R.O.T.C. supervisor for application. Military service postponement for male students who have reached the age 20 and who have never been trained in the R.O.T.C. Program (Reserved Officer Training Corps) is possible following submission of the relevant documents during the specified period.

• Lost & Found

A Lost & Found service is available during working hours for students who have lost or found any property on campus. If advice is needed, students are to contact the Disciplinary Advisor directly. During non–working hours, they should report to the security guards.

• Letter of Recommendation

Students can request letters of behavioral recommendation by submitting the petition forms at the Student Rights & Discipline Division.

St. Martin Center for Professional Ethics & Service Learning

St. Martin Center for Professional Ethic & Service Learning is responsible for fulfilling Assumption University's vision of 'continuous improvement', of students' personal integrity and professional ethics. The center utilizes both in classroom learning, and 'Service Learning' to facilitate students' growth in terms of self-discipline, self-control, personal and social responsibility, moral maturity, cognitive moral reasoning and social awareness. These programs and activities include:

- Business and Professional Ethics Seminar (BG1403) which is a requirement for graduation for all Au undergraduate students. Each student has to attend this class twice a semester, totaling sixteen classes in all during four years.
- Service-Learning is a special requirement for third year, first semester students. Through this program, each year Au students organize more than a hundred projects in many provinces, which contribute to Thai society.
- Moral Training is a special program to help students to reflect on their life, discover their moral orientation, and learn together in groups how to solve moral dilemmas systematically.





The Center for Student

Leadership and Experiential Learning

Realizing the fact that learning takes place both inside classrooms and outside classrooms, The Center for Student Leadership and Experiential Learning is assigned to create, develop, and maintain out-of-classroom learning activities in different respects that fit students' individual differences, talents, and interests.

To promote a democratic way of life, and leadership on campus, the university encourages students to participate in and manage various kinds of extracurricular activities. Depending on different interests, students voluntarily choose to prepare themselves for later life through their involvement in the Student Organization, the student committee of faculties and majors, the resident student committee, clubs, activity groups and those projects or programs organized by these student activity units.

The Assumption University Student Organization, made up of an elected President and other executive members, is the governing body of student activities. It is empowered to supervise student committees, clubs, and other activity units.

The Categories of clubs and units under the Student Organization include Academic, Value and Ethics Promotion, Sports, Music and Art Performance, Recreation, Social and Environmental Development, Information and Public Relations.

More than 40 student clubs in the campus are gatherings of students of the same interest to share their talent and contribute to society. 'Activities for All' provides opportunities for students to form either a small, middle-sized, or big groups for any creative project or activity of their special interest. Advisors at the center are ready to advise, assist, coordinate students to, or disseminate information on student activities/ projects so as to ensure that even beginners can start projects/ activities on their own initiative.

Learning Support Center

The Learning Support Center (LSC) strives to help students 'learn how to learn', help solve learning problems; and promote the right attitude towards educational achievement. The center works closely with academic deans and chairpersons to facilitate effective study. The LSC believes that, through proper learning strategies and techniques, all students will achieve academic excellence. Services and activities include:

- counseling and advising for learning behavior;
- student development programs including short training sessions, workshops, and seminars to further develop study skills and time management skills in students.
- the LSC Mini Library which provides supplementary materials and educational media such as video cassettes, CD-ROMs and textbooks to enhance students' learning skills;
- on Educational Testing Service which includes Intelligence Testing and Learning Behavior Testing to help students to find out learning styles, strengths and weaknesses.

Career Development Center

Career development is an ongoing, life-long process. The Career Development Center (CDC) is prepared to assist students in applying their particular combination of interests, abilities, values, and motivations to a systematic search of the working world and potential professional and educational opportunities.

The center provides students and recent graduates with advice, information, and on-campus services regarding full-time and part-time employment, career planning and development. Services and activities include career-related programs and workshops, job placement, career week, summer job training program, alumni talk, career resources, company relations and services.

Moreover, so as to create a sense of entrepreneurship in students, the Career Development Center with the cooperation of ABAC School of Management, has established the Dummy Company Project that gives opportunities to students to form organizations. This project is run by students themselves as a real business enterprise. It enables students to have a direct experience in management as well as experience in a real business organization.



OFFICE OF INTERNATIONAL AFFAIRS





The Office of International Affairs reports to the Office of the President and is responsible for taking the lead in establishing international education exchanges and study abroad opportunities at both undergraduate and postgraduate level programs.

The Office provides guidance and counseling for students who wish to spend a semester abroad, to transfer as an undergraduate or to continue postgraduate studies at other international institutions. It is also charged to collaborate with the Office of Student Affairs, the International Students Center, the Office of Thai Art and Culture and with each faculty to enhance the care taking of international students.

OPPORTUNITIES ON STUDENT EXCHANGE PROGRAMS

Assumption University's Student Exchange Program gives students the opportunity to experience life in another country while still earning credits towards their degree.

Assumption University has numerous agreements of cooperation with institutions in 33 countries. Most agreements include elements for student exchange, faculty exchange, sharing of research and more.

32 Institutions from 14 countries send their students on Exchange study programs. Assumption University students can also go to these institutions on student exchange programs.

JOINT DEGREE PROGRAMS

Assumption University has several joint degree programs which allow students to study partially at Au and then to complete their degree at a western university. The degree, awarded by the western university, is thus obtained at a substantially lower cost than having to study at the overseas university full-time. Au currently has seven Post-Graduate joint degree programs and two Undergraduate joint degree programs and is exploring others.

Bachelor Degree Programs

Au – Wollongong (Australia)	
Au – BLCU (China)	
Au – Rajagiri (India)	
Au – UCD (United States)	B.B.A. Twinning Program

Master's Degree Programs

Business & Management	
Financial Management **	MSc-FM - Financial Management
International Business *	MSc-IB - International Business
International Marketing *	MSC-IM - International Marketing
Biotechnology	
Food Biotechnology***	MSc. FB – Food Biotechnology
Law	
International Business Law **	LLM - International Business Law
Engineering	
Telecommun. & Computer Network Engineering *	MScTeCNE - Tele. & Comp Net Engr
Information Technology	
Internet and Multimedia Engineering *	MSc-IME - Internet and Multimedia Engr.
Education, Language, Philosophy, Religion & Tourism	
Teaching English as a Second Language *	MA-TESL - Teaching English as a 2nd Lang.

Doctoral Degree Programs

Food Biotechnology***	Ph.D.FB
Internet & Multimedia Engineering *	Ph.D.-IME
Telecommun. & Computer Network Engr. *	Ph.D. - TeCNE

* Joint program with South Bank University, UK
** Joint program with the University of Exeter, UK
*** Joint program with University of California, Davis

ACCEPTANCE MODES BY OVERSEAS UNIVERSITIES:

Assumption University has numerous agreements of cooperation with institutions in 33 countries. Most agreements include elements for student exchange, faculty exchange, sharing of research and more. Universities that have worked with Au on such arrangements include though not exhaustively, quite actively, include:

Australia:
- Griffith University
- The University of New South Wales
- University of Queensland
- University of Wollongong
- Australian Catholic University

Europe:
- ESCIP, France
- ESPEME Lille, France
- ESPEME, Nice, France
- FHS Kufstein Tirol University of Applied Sciences, Austria
- Hogeschool Utrecht, The Netherlands
- IESEG School of Management, France
- Jyvaskyea University of Applied Sciences, Finland
- Laurea University of Applied Sciences, Finland
- Louvain Catholic University, Belgium
- Stockholm University, Sweden
- Tampere Polytechnic University of Applied Sciences, Finland
- The Catholic University of the West, France
- The Hague University, The Netherlands
- University of Applied Sciences Mainz, Germany
- Hogeschool Zuyd, Netherland

South East Asia:
- Hong Kong Baptist University, Hong Kong
- Kansai Gaidai University, Japan
- Ryukoku University, Japan
- Sogang University, Korea
- University of the Sacred Heart, Japan

United Kingdom:
- London South Bank University
- Nottingham University
- University of Exeter
- Warwick University
- De Montfort University

United States:
- Ball State University
- De Paul University in Chicago
- Loyola University Baltimore
- Monterary Institute in California
- Murray State University
- Pepperdine University, California
- Pittsburgh State University
- Tarleton State University
- The University of the Incarnate Word
- The University of Dayton
- The University of Wisconsin Whitewater
- The University of California, Davis

AGREEMENTS AND LINKAGES

In terms of visiting Professors and study groups traveling abroad on short courses and internships as the result of agreements on Academic co-operation:

Australia:
- Griffith University
- The University of New South Wales
- University of Queensland
- Wollongong University

Finland:
- Jyvaskyea University of Applied Sciences, Finland
- Laurea University of Applied Sciences
- Tampere Polytechnic University of Applied Sciences, Finland

France:
- Catholic University of Lille
- Catholic University of the West
- ESCIP School of International Business
- IESEG School of Management, France
- IESEG School of Management, France

Germany:
- University of Applied Sciences Mainz
- University of Siegen

Japan:
- Kansai Gadai University
- Nihon University
- Ryokoku University
- University of the Sacred Heart
- Kansai University of International Studies





United Kingdom:

- London South Bank University
- University of Exeter

United States:

- Ball State University
- De Paul University in Chicago
- Murray State University
- New Mexico State University
- Pittsburg State University, Kansas
- Tarleton State University Stephenville, Texas
- The University of California, Davis
- The University of Dayton
- University of Incarnate Word, San Antonio, Texas

DIRECT INDEPENDENT ADMISSIONS EITHER THROUGH TRANSFERS OR THROUGH POST GRADUATE ADMISSIONS

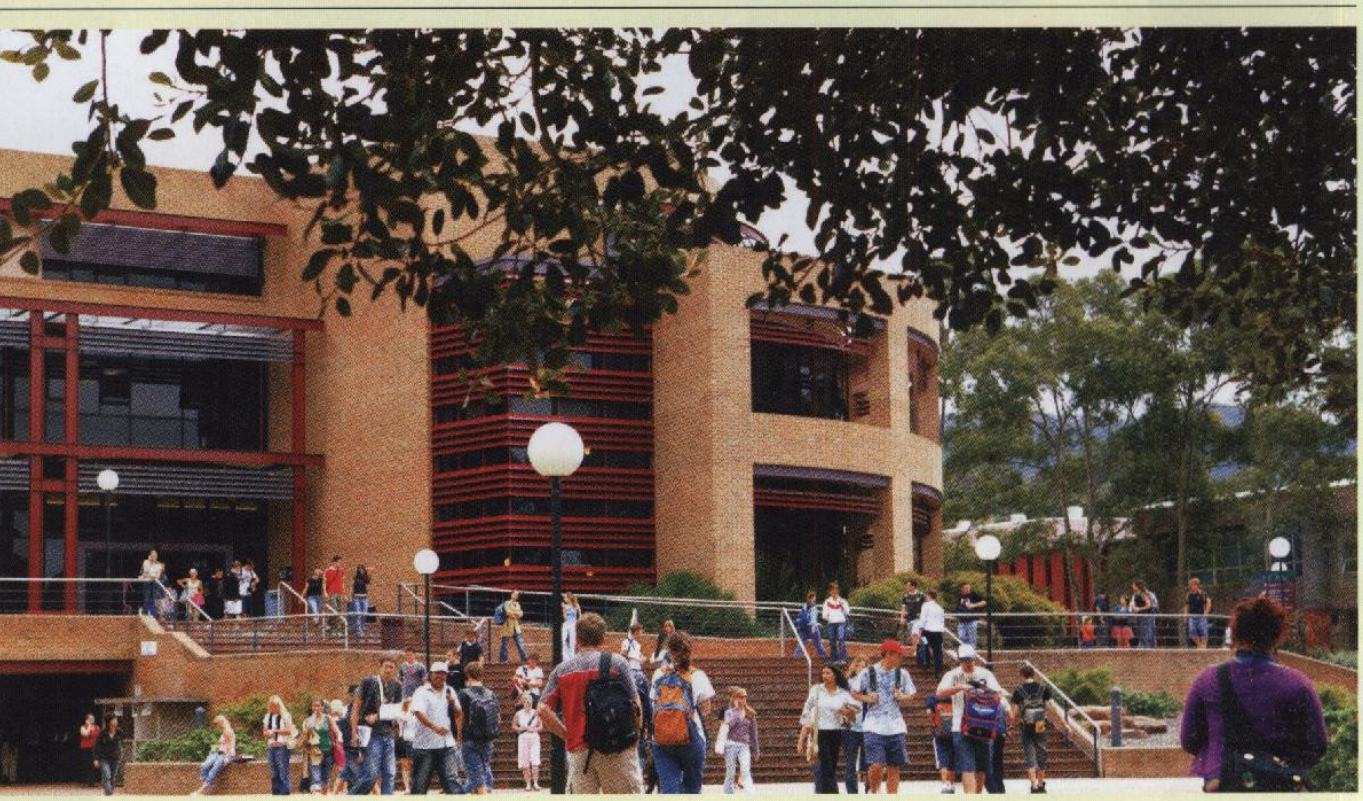
Over the past 42 years Assumption University graduates have been accepted into programs of pride in Canada, United States, United Kingdom, Europe, Australia and Asia.

Such acceptances have been made possible through Assumption University's strong curriculum, English language instruction and rigorous testing methods.





Assumption University & University of Wollongong Program For Business Administration Students



STUDENT OPTIONS

The University of Wollongong; NSW Australia and Assumption University; Bangkok Thailand have entered into a historic agreement that will permit qualified BBA students to enter into the second year of Wollongong's 3-year Bachelor of Commerce (B.COM) degree program.

BACHELOR OF COMMERCE AT UNIVERSITY OF WOLLONGONG REQUIREMENTS

- Each ABAC subject must be at C- grade or higher
- TOEFL 213 (computer), 79 (Internet), and TWE 4.0
- OR IELTS 6.0 or above (Reading & Writing band must also be 6)
- There is a 18-week Wollongong University Directly Entry Course offered by the Wollongong College Australia for students who cannot initially score 213 on the TOEFL or 6.0 on the IELTS

Completion of the following subjects at Au is equivalent to the 60 credit points of advanced standing of the Bachelor of Commerce at UoW

	Au Subjects	UoW Subjects	
1	ACT1600 Fundamentals of Financial Accounting	ACCY111 Accounting Fundamentals in Society	6
2	ACT2620 Fundamentals of Managerial Accounting	ACCY112 Accounting in Organisations	6
3	BG1201 Statistics I BG2200 Statistics II	COMM121 Business Statistics	6
4	BG2400 Macroeconomics FIN2700 Money, Banking and Financial Markets	ECON101 Macroeconomic Essentials for Business	6
5	BG1400 Business Law I BG1401 Business Law II	LAW101 Law, Business and Society	6
6	MGT2900 Principles of Management	MGMT110 Introduction to Management	6
7	MKT2280 Principles of Marketing	MARK101 Marketing Principles	6
8	BIS2180 Information Technology	COMM113 Business Oriented Information Systems	6
9	BG2401 Microeconomics MGT1101 Introduction to Business	ECON111 Introductory Microeconomics	6
10	BG1200 Mathematics for Business	ECON222 Mathematics for Business	6

Program of study required for the award from Faculty of Commerce

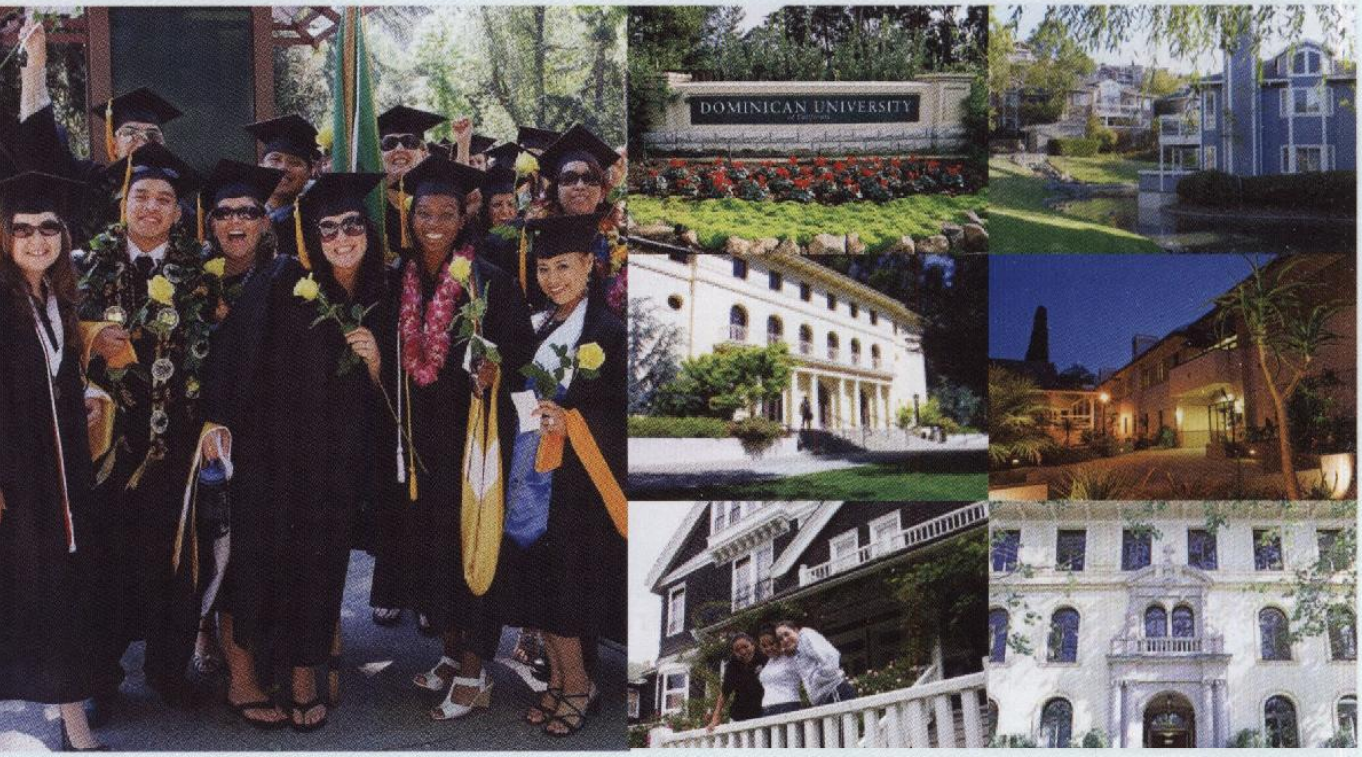
Bachelor of Commerce, in the following Major

Bachelor of Commerce, in the following Major

1) Accountancy
2) Economics
3) Business Innovation
4) Management
5) Marketing
6) Finance
7) Financial Planning
8) Business Law
9) Human Resource Management
10) Public Relations
11) International Business
12) Supply Chain Management
13) Quantitative Analysis in Economics

Tuition fees for B.Com program at the University of Wollongong is AUD$ 20,502.00/year (refer to year 2011), Overseas Student Health Cover AUD$ 420.00/year. Living expense including accommodation is approximately AUD$ 12,000/year. These will be estimate total AUD$ 32,922/year.

Assumption University and Dominican University of California
Double Degree Program



PROGRAM OBJECTIVES

The program will create an opportunity for students to acquire a breadth of understanding and knowledge and enhance their flexibility needed to adapt to the changes in technology, culture and business.

It provides opportunities to students and faculties to gain international higher education experience through the two universities cooperation in Joint Study Program.

It will also strive to excite and nurture the intellectual, technical, professional and personal development of the students through a partnership which provides a mechanism for Dominican University of California to share its campus, resources and personnel with Assumption University of Thailand and vice versa.

The program reflects the eagerness of the institutions to work in unison to serve the needs of the international business community by preparing the students to face both the managerial and technological challenges associated with innovation and technical activities throughout the business firm.

Program structure

- Undergraduate "3+1" double degree program;
- AU students have the opportunity to spend the first three (3) years of their chosen BBA degree at AU and the remaining one (1) or two (2) years at Dominican University of California.

Students who completed the requirements of both universities will receive the bachelor degree from both universities

Choices for Programs of study

- Finance and Banking Concentration
- Management Concentration
- Marketing Concentration
- Accounting Concentration
- International Business Management Concentration

Tuition fees:
students will pay the tuitions and fees to the university where they study



MARTIN DE TOURS SCHOOL OF MANAGEMENT

CURRICULUM STRUCTURE

Courses	MKT	MGT	FIN	ACT	BIS	HTM	IBM	IDM	REM	INS	ECO
A. General Education Courses	40	40	40	40	40	40	40	40	40	40	45
- Language Courses	15	15	15	15	15	15	15	15	15	15	15
- Social Science Courses	13	13	13	13	13	13	13	13	13	13	6
- Humanities Courses	6	6	6	6	6	6	6	6	6	6	9
- Science and Mathematics Courses	6	6	6	6	6	6	6	6	6	6	15
B. Specialized Courses	93	93	93	96	96	93	93	93	93	93	90
- Business Core Courses	48	48	48	48	45	48	48	48	48	48	33
- Major Required Course	30	30	30	36	42	30	30	30	30	30	30
- Major Elective Courses	-	-	-	-	-	-	-	-	-	-	12
Concentration Courses	15	15	15	12	9	15	15	15	15	15	15
C. Free Elective Courses	9	9	9	6	6	9	9	9	9	9	9
Total Credits	142	142	142	142	142	142	142	142	142	142	144





OBJECTIVES

The School of Management offers a wide range of undergraduate courses including the traditional disciplines of Marketing, Finance, Management and Accounting in conjunction with the emerging fields of study such as Business Information Systems for students wishing to work in private and public sectors. Through an innovative, practical, and high-quality teaching program, the students are allowed to:

- Develop sound knowledge and practical skills to adapt to the fast changing, highly competitive business world,
- Develop the ability to analyze and solve problems and make management decisions,
- Be equipped with communicative skills and the ability to handle advanced information and communication technology,
- Prepare themselves for a wide range of careers including working as professionals and entrepreneurs,
- Be leaders in the business community.

The School of Management offers Programs of study as follows:

- Marketing (MKT)
- Management (MGT)
- Finance and Banking (FIN)
- Accounting (ACT)
- Business Information Systems (BIS)
- Hospitality and Tourism Management(HTM)
- International Business Management (IBM)
- Industrial Management (IDM)
- Real Estate (REM)
- Insurance (INS)
- Business Economics (ECO)

GRADUATION REQUIREMENTS

To be qualified for graduation, the student must

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline

DEPARTMENT OF MARKETING

Degree Conferred: **Bachelor of Business Administration (Marketing)**
B.B.A. (Marketing)

Program Objective: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth*
- *Knowledgeable of marketing principles, possess analytical tools and practical knowledge to make sound marketing decision*
- *Flexible competent and well-rounded in confronting and solving business problems*
- *Able to work as a team and motivate others to work*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills*

A. General Education Courses **40 Credits**
Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses **6 Credits**

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses **6 Credits**

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3



B. Specialized Courses **93 Credits**
Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

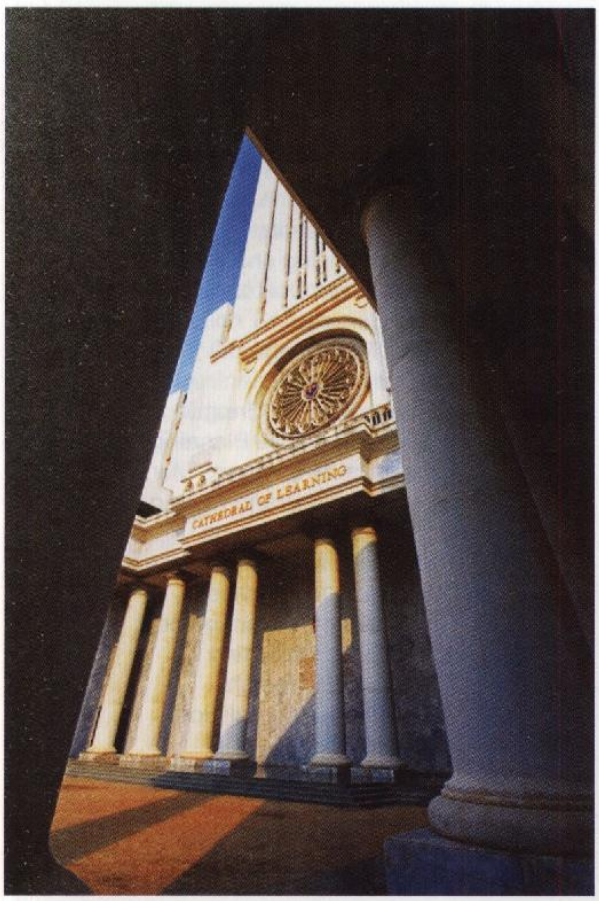
Major Required Courses **30 Credits**

BIS 3587	Principles of Electronic Commerce	3
MKT 3102	Integrated Marketing Communications	3
MKT 3515	Purchasing and Supply Chain Management	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3620	Global Marketing	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4829	Marketing Decision Making	3
MKT 4855	Research in Marketing	3

Concentration Courses

Students must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses 15 Credits
Or Plan B: Business Concentration Courses 15 Credits
Or Plan C: Major Elective Courses 15 Credits



PLAN A – Major Concentration Courses 15 Credits

Students pursuing PLAN A must select a concentration in the major area and study the five specified courses.

Integrated Marketing Communications

MKT 3627	Sales Promotion	3
MKT 3628	Public Relations	3
MKT 4726	Advertising and Creative Strategy	3
MKT 4727	Integrated Media Planning	3
MKT 4849	IMC Campaign Planning	3

Strategic Marketing

MKT 3629	Pricing Strategy and Decisions	3
MKT 3823	Marketing Channel Strategy and Decisions	3
MKT 4806	Product and Brand Management	3
MKT 4811	Seminar in Marketing	3
MKT 4848	Contemporary Issues in Marketing	3

Retail Entrepreneurship

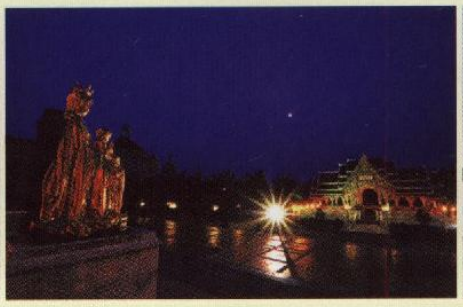
MKT 3803	Retail Management	3
MKT 3836	Merchandising and Promotion	3
MKT 3837	Service and Customer Relationship Management	3
MKT 4897	Marketing Internship	3
MKT 4898	Seminar in Entrepreneurship	3

PLAN B – Business Concentration Courses 15 Credits

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Advertising

AD 3106	Art Direction	3
AD 3112	Brand Communication	3
AD 4108	Basic Copywriting (English)	3
CA 2004	Introduction to Advertising	3
CA 2013	Utilization of Multimedia Tools	3


Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
IBM 4820	International Cooperative Strategy	3

Industrial Management

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3

Insurance Management

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4302	Accident, Group and Health Insurance	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3

PLAN C – Major Elective Courses

Students pursuing PLAN C must select any five major elective courses.

MKT 3627	Sales Promotion	3
MKT 3628	Public Relations	3
MKT 3629	Pricing Strategy and Decisions	3
MKT 3803	Retail Management	3
MKT 3804	Fashion Marketing	3
MKT 3823	Marketing Channel Strategy and Decisions	3
MKT 3830	Direct Marketing	3
MKT 3836	Merchandising and Promotion	3
MKT 3837	Service and Customer Relationship Management	3
MKT 3838	Event Marketing	3
MKT 3840	Digital Marketing	3
MKT 4726	Advertising and Creative Strategy	3
MKT 4727	Integrated Media Planning	3
MKT 4805	Business-to-Business Marketing	3
MKT 4806	Product and Brand Management	3
MKT 4807	Agricultural Marketing	3
MKT 4808	Advanced Marketing Presentation	3
MKT 4809	Marketing for Services	3
MKT 4810	Export-Import Management	3
MKT 4811	Seminar in Marketing	3
MKT 4812	Individual Research	3
MKT 4826	Contemporary Logistics	3
MKT 4845	IMC Research	3
MKT 4848	Contemporary Issues in Marketing	3
MKT 4849	IMC Campaign Planning	3
MKT 4856	Brand Building Strategy	3
MKT 4857	Qualitative Research in Marketing	3

MKT 4897	Marketing Internship	3
MKT 4898	Seminar in Entrepreneurship	3
MKT 4899	IMC Internship	3
FIN 3715	Personal Finance	3
FIN 3724	Financial Feasibility Planning	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3

C. Free Elective Courses 9 Credits

Students can select courses of 9 credits which are provided by their faculty or by the different faculties upon completion of the prerequisite.

STUDY PLAN

First and Second Years (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Years (Junior and Senior)
During the junior and senior years, students who select the Marketing Major follow the Marketing program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   - Plan A: Major Concentration Courses
   - Or Plan B: Business Concentration Courses
   - Or Plan C: Major Elective Courses
3. Three Free Elective Courses

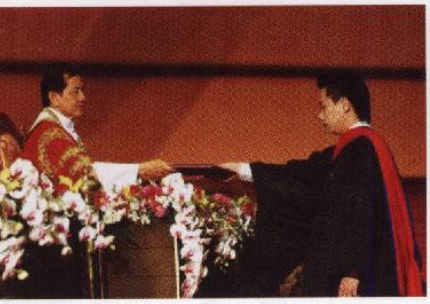
FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***





SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***

THIRD YEAR
First Semester

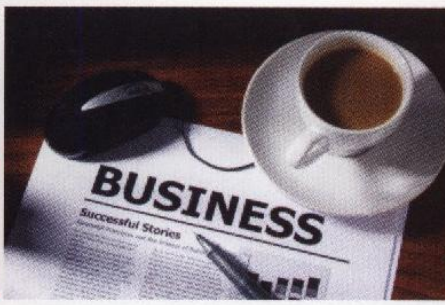
Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
BIS 3587	Principles of Electronic Commerce	3
FIN 3701	Corporate Finance	3
MKT 3102	Integrated Marketing Communications	3
MKT 3530	Consumer Behavior	3
MKT 3620	Global Marketing	3
	One Plan A or Plan B or Plan C Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MKT 3515	Purchasing and Supply Chain Management	3
MKT 3525	Sales Management	3
	One Plan A or Plan B or Plan C Course	3
	Total	***18***







FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MKT 4725	Competitive Analysis and Strategy	3
MKT 4855	Research in Marketing	3
	Two Plan A or Plan B or Plan C Courses	6
	Two Free Elective Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 4914	Entrepreneurship	3
MKT 4730	Marketing Management	3
MKT 4829	Marketing Decision Making	3
	One Plan A or Plan B or Plan C Course	3
	One Free Elective Course	3
	Total	***15***

DEPARTMENT OF MANAGEMENT

Degree Conferred: **Bachelor of Business Administration (Management)**
B.B.A. (Management)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Have a base of good ethical and moral values.*
- *Have knowledge and pragmatic managerial skills appreciated by international organizations.*
- *Have entrepreneurial knowledge and skills and able to apply the management knowledge in finance, marketing, human resources, and information technology.*
- *Have responsibility and good relationships which makes them a good team player*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

for All Concentrations Except Commerce Concentration

BIS 4875	Strategic Technology Management	3
FIN 3714	Business Condition Analysis	3
FIN 4813	Financial Management	3
MKT 4730	Marketing Management	3
MGT 3903	Leadership	3
MGT 3923	Strategic Human Resources Management	3
MGT 3945	Managerial Decision Modeling	3
MGT 4910	Productivity and Quality Management	3
MGT 4911	Seminar in Management	3
MGT 4951	Strategic Management	3

Major Required Courses ***30 Credits***

for Commerce Concentration

BIS 3588	Digital Business Enterprise	3
FIN 3714	Business Condition Analysis	3
FIN 4813	Financial Management	3
MGT 3901	Organization Theory	3
MGT 3923	Strategic Human Resources Management	3
MGT 3945	Managerial Decision Modeling	3
MGT 4910	Productivity and Quality Management	3
MGT 4911	Seminar in Management	3
MGT 4951	Strategic Management	3
MKT 4730	Marketing Management	3

Concentration Courses

Students must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses 15 Credits
or Plan B: Business Concentration Courses 15 Credits
or Plan C: Major Elective Courses 15 Credits

PLAN A – Major Concentration Courses 15 Credits

Students pursuing PLAN A must select one of the following a concentrations in the major area and study the five specified courses.

Entrepreneurial Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 3928	Management for Growth and Sustainability	3
MGT 4806	Management Internship (240 Hours)	3

Strategic Human Resources Management

MGT 3924	Human Resources Development	3
MGT 3942	Organizational Behavior	3
MGT 4926	Compensation and Performance Management	3
MGT 4928	Employment Relations and Labor Law	3
MGT 4946	Human Resources Management Internship (240 Hours)	3

Commerce (For ACC Campus only)

MGT 4945	Cooperative Education (720 Hours)	9
MKT 3525	Sales Management	3
MKT 4810	Export-Import Management	3

PLAN B – Business Concentration Courses 15 Credits

Students pursuing PLAN B must select a concentration in other business areas and study five specified courses.

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4815	Bank Management	3
FIN 4832	Entrepreneurial Finance	3





Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

Industrial Management

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3

Insurance

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4302	Accident, Group and Health Insurance	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3620	Global Marketing	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4809	Marketing for Services	3

Real Estate

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3

PLAN C – Major Elective Courses

Students pursing PLAN C must select any five of major elective courses.

FIN 3724	Financial Feasibility Planning	3
FIN 4832	Entrepreneurial Finance	3
MGT 3801	Modern Office Management	3
MGT 3901	Organization Theory	3
MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3918	Sport Management	3
MGT 3922	Introduction to New Venture	3
MGT 3924	Human Resources Development	3
MGT 3928	Management for Growth and Sustainability	3
MGT 3942	Organizational Behavior	3
MGT 4501	Wealth Management	3
MGT 4806	Management Internship (240 Hours)	3
MGT 4909	Communication in Management	3
MGT 4912	Individual Research	3
MGT 4916	Negotiation Strategy	3
MGT 4926	Compensation and Performance Management	3
MGT 4927	Human Resources Planning	3
MGT 4928	Employment Relations and Labor Law	3
MGT 4943	Organizational Development	3
MGT 4946	Human Resources Management Internship (240 Hours)	3
MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3803	Retail Management	3
MKT 4805	Business-to-Business Marketing	3
MKT 4810	Export – Import Management	3

C. Free Elective Courses **9 Credits**

Students can select free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

Recommended Free Elective Courses for Commerce Concentration

CN 0400	Chinese for Beginners I	3
CN 0401	Chinese for Beginners II	3
MKT 3515	Purchasing and Supply Chain Management	3

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Management Major follow the program as mentioned below:

1. Ten Major Required Courses
2. Five Concentration Courses
   Plan A: Major Concentration Courses
   Or Plan B: Business Concentration Courses
   Or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***





SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2202	Ethics	3
GE 2101	World Civilization	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***

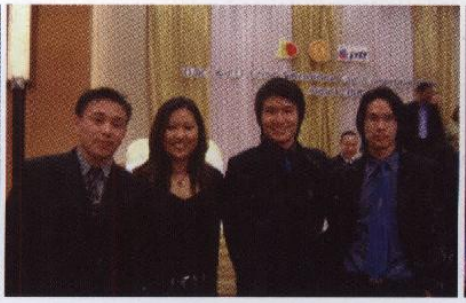
1) Third and Fourth Year of Study for
All Concentrations except Commerce Concentration

THIRD YEAR
First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
MGT 3903	Leadership	3
MGT 3905	Operations Management	3
MGT 3923	Strategic Human Resources Management	3
	One Plan A OR Plan B OR Plan C Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BIS 4875	Strategic Technology Management	3
FIN 3714	Business Condition Analysis	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 3945	Managerial Decision Modeling	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***


FOURTH YEAR
First Semester

Course Code	Course Title	Credits
FIN 4813	Financial Management	3
MGT 4910	Productivity and Quality Management	3
MGT 4914	Entrepreneurship	3
MKT 4730	Marketing Management	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 4911	Seminar in Management	3
MGT 4951	Strategic Management	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B /Plan C Course	3
	One Free Elective Course	3
	Total	***15***

2) Third and Fourth Year of Study for Commerce Concentration

THIRD YEAR
First Semester

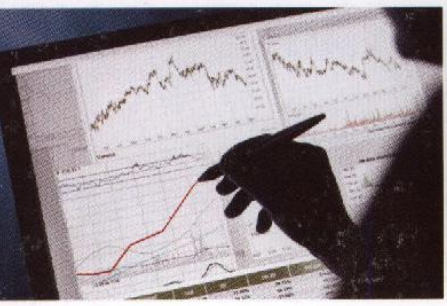
Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
MGT 3901	Organization Theory	3
MGT 3905	Operations Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3940	Business Research Methodology	3
	One Free Elective Course	3
	Total	***18***

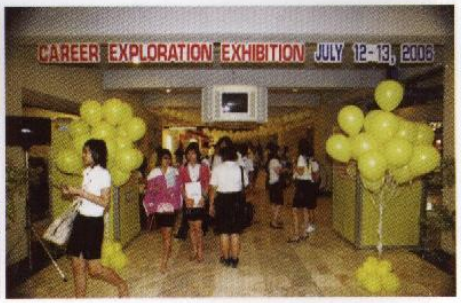
Second Semester

Course Code	Course Title	Credits
BIS 3588	Digital Business Enterprise	3
FIN 3714	Business Condition Analysis	3
MGT 3907	Business Communication	3
MGT 3945	Managerial Decision Modeling	3
MKT 3525	Sales Management	3
MGT 4910	Productivity and Quality Management	3
	Total	***18***

Summer Session

Course Code	Course Title	Credits
MKT 4810	Export-Import Management	3
	One Free Elective Course	3
	Total	***6***





FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MGT 4945	Co-operative Education (720 Hours)	9
	Total	***(720 Hours) 9***

Second Semester

Course Code	Course Title	Credits
FIN 4813	Financial Management	3
MGT 4911	Seminar in Management	3
MGT 4951	Strategic Management	3
MGT 4914	Entrepreneurialship	3
MKT 4730	Marketing Management	3
	One Free Elective Course	3
	Total	***18***



DEPARTMENT OF
FINANCE AND BANKING

Degree Conferred: **Bachelor of Business Administration (Finance and Banking)**
B.B.A. (Finance and Banking)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound committed to acting justly and open to future growth*
- *Have knowledge of the financial principles and theories in the functional areas for making effective financial decisions*
- *Utilize analytical tools, logical and critical thinking, and practical knowledge in order to solve business and financial problems*
- *Able to work as a team and motivate others to work*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

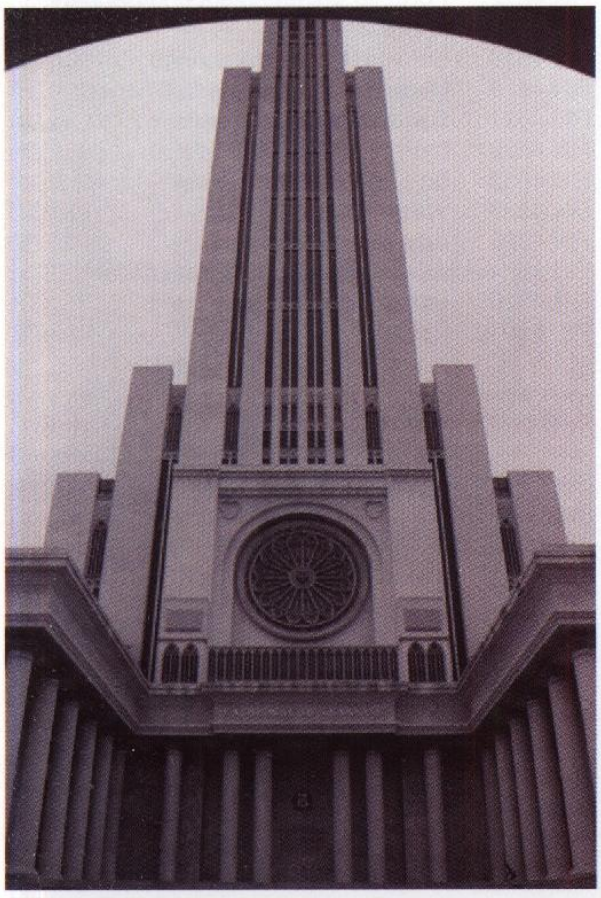
Major Required Courses ***30 Credits***

BIS 3589	Analysis Tools in Finance and Accounting	3
FIN 3711	Investment	3
FIN 3713	Business Analysis and Valuation	3
FIN 3714	Business Condition Analysis	3
FIN 4812	International Finance	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3
FIN 4911	Quantitative Analysis of Financial Decision	3
FIN 4921	Corporate Strategy and Financial Policies	3
FIN 4922	Derivatives Securities	3

Concentration ***15 Credits***

Students must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses 15 Credits
or Plan B: Business Concentration Courses 15 Credits
or Plan C: Major Elective Courses 15 Credits



PLAN A – Major Concentration Courses 15 Credits

Students pursuing PLAN A must select a concentration in the major area and study the five specified courses.

Investment

FIN 3727	Real Estate Investment Analysis and Valuation	3
FIN 3728	Fixed Income Securities	3
FIN 4811	Risk Management	3
FIN 4817	Portfolio Management and Security Analysis	3
FIN 4818	Seminar in Investment	3

Corporate Financial Management

FIN 3724	Financial Feasibility Planning	3
FIN 3726	Financial Statement Analysis	3
FIN 4811	Risk Management	3
FIN 4819	Contemporary Issues in Finance	3
FIN 4924	Advanced Financial Management	3

PLAN B – Business Concentration Courses 15 Credits

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Accounting

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
ACT 3629	Profits Planning and Control	3

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategies	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial Management

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3

Insurance

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4302	Accident, Group and Health Insurance	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Real Estate

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3

PLAN C – Major Elective Courses

Students pursuing PLAN C must select any five major elective courses.

BIS 3348	Principles of Multimedia	3
BIS 3588	Digital Business Enterprises	3
BIS 3687	Electronic Banking and Payment Systems	3
ECO 3715	Introduction to Econometrics	3
ECO 3722	Business Cycles and Forecasting	3
FIN 3715	Personal Finance	3
FIN 3716	Export-Import Procedure and Financing	3
FIN 3723	Central Banking System and Policy	3
FIN 3724	Financial Feasibility Planning	3
FIN 3725	Managerial Economics	3
FIN 3726	Financial Statement Analysis	3
FIN 3727	Real Estate Investment Analysis and Valuation	3
FIN 3728	Fixed Income Securities	3
FIN 3733	Institutional Banking for Emerging Markets	3
FIN 3734	Financial Mathematics	3
FIN 4721	Laws and Practices in Finance	3
FIN 4811	Risk Management	3
FIN 4817	Portfolio Management and Security Analysis	3
FIN 4818	Seminar in Investment	3
FIN 4819	Contemporary Issues in Finance	3
FIN 4821	Behavioral Finance	3
FIN 4822	Individual Research	3
FIN 4832	Entrepreneurial Finance	3
FIN 4833	Wealth Management	3
FIN 4923	Advanced Valuation	3
FIN 4924	Advanced Financial Management	3
FIN 4925	Introduction to Modeling	3
REM 3213	Real Estate Appraisal	3

C. Free Elective Courses **9 Credits**

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Finance and Banking Major follow the Finance and Banking program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   - Plan A: Major Concentration Courses
   - Or Plan B: Business Concentration Courses
   - Or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***





THIRD YEAR
First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
BIS 3589	Analysis Tools in Finance and Accounting	3
FIN 3701	Corporate Finance	3
FIN 3714	Business Condition Analysis	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
	One Free Elective Course	3
	Total	***18***

Second Semester

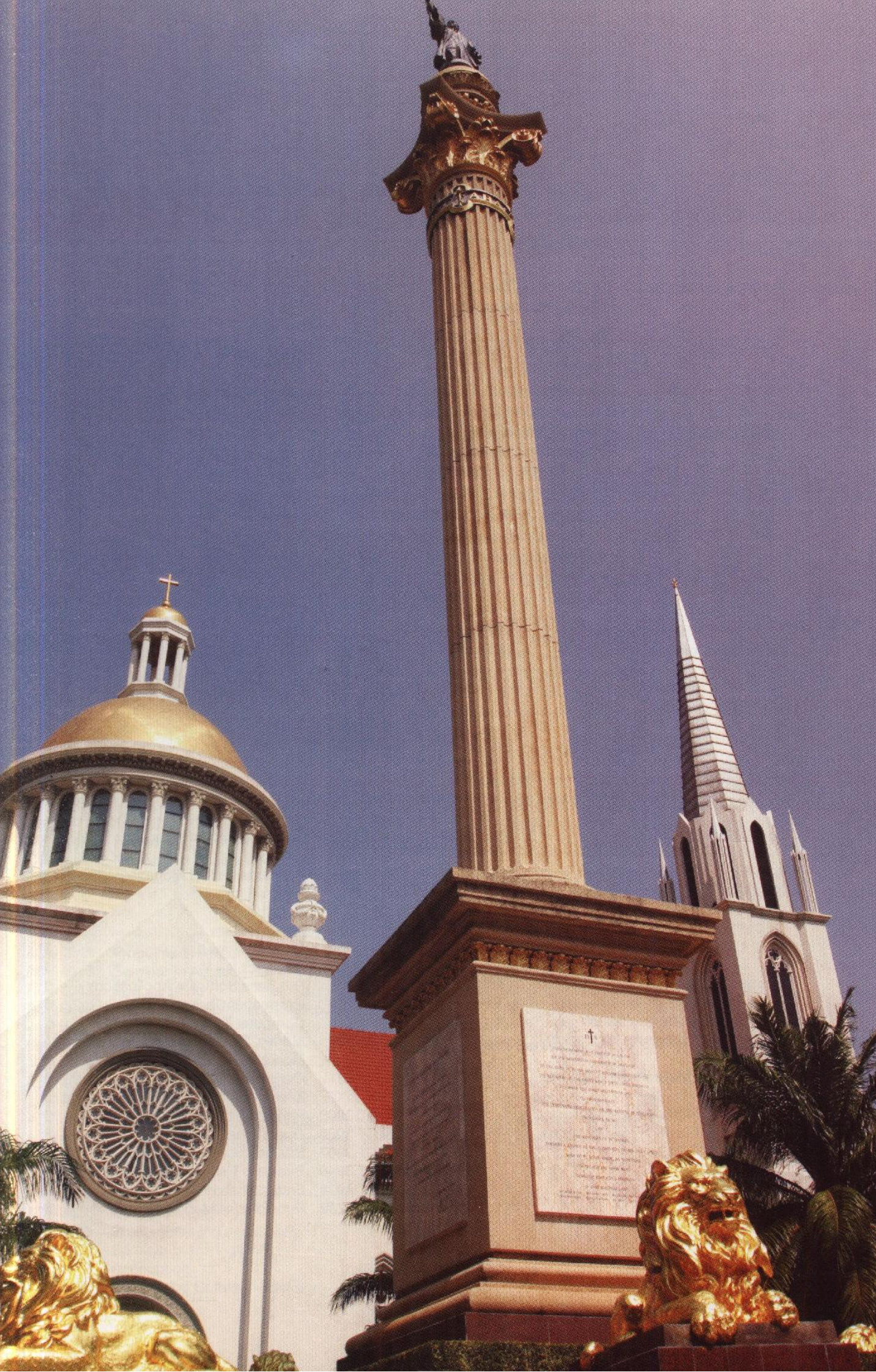
Course Code	Course Title	Credits
FIN 3711	Investment	3
FIN 3713	Business Analysis and Valuation	3
MGT 3940	Business Research Methodology	3
	Two Plan A / Plan B / Plan C Courses	6
	One Free Elective Course	3
	Total	***18***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
FIN 4812	International Finance	3
FIN 4813	Financial Management	3
FIN 4911	Quantitative Analysis of Financial Decisions	3
FIN 4815	Bank Management	3
	Two Plan A / Plan B / Plan C Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
FIN 4921	Corporate Strategies and Financial Policies	3
FIN 4922	Derivatives Securities	3
MGT 4914	Entrepreneurship	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Course	3
	Total	***15***



DEPARTMENT OF
ACCOUNTING

Degree Conferred: **Bachelor of Business Administration (Accounting)**
B.B.A. (Accounting)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth.*
- *Have knowledge of accounting principles; possess analytical tools and practical knowledge and skills to make sound accounting decision*
- *Flexible, competent and well-rounded in confronting and solving accounting, financing, and related business problems.*
- *Able to apply accounting principles in the practice of their profession.*
- *Able to work as a team and motivate others to work.*
- *Have positive attitude towards the accounting professions, interpersonal, calculation, analytical, communication and presentation skills, and IT skills*

A. General Education Courses ***40 Credits***

Language Courses **15 Credits**

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For International students)	3

Social Science Courses **13 Credits**

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses **6 Credits**

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses **6 Credits**

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses ***96 Credits***

Business Core Courses **48 Credits**

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses **36 Credits**

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3608	Financial Report and Financial Statement Analysis	3
ACT 3614	Taxation I	3
ACT 3615	Taxation II	3
ACT 3622	Cost Accounting	3
ACT 3643	Auditing	3
ACT 3644	Internal Control and Audit	3
ACT 4607	Advanced Accounting I	3
ACT 4608	Advanced Accounting II	3
ACT 4611	Seminar in Accounting	3
ACT 4646	Accounting Information Systems	3

Concentration Courses

Students must choose one of the two following plans as their concentration courses.

Plan A: Major Concentration Courses 12 Credits
OR Plan B: Business Concentration Courses 12 Credits

PLAN A: MAJOR CONCENTRATION COURSES

Students must choose one of the four following tracks as their major concentration courses.

Track A: Auditing 12 Credits
OR Track B: Financial Accounting 12 Credits
OR Track C: Managerial Accounting 12 Credits
OR Track D: Others 12 Credits

Auditing

ACT 4641	Problems in Auditing	3
ACT 4643	Seminar in Auditing	3
ACT 4648	EDP Auditing	3
ACT 4649	Accounting Internship (135 Hours)	3

Financial Accounting

ACT 4605	International Accounting	3
ACT 4609	Accounting Theory	3
ACT 4647	Accounting Software Package	3
ACT 4649	Accounting Internship (135 Hours)	3

Managerial Accounting

ACT 3623	Cost Management	3
ACT 3629	Profits Planning and Control	3
ACT 4624	Seminar in Management Accounting	3
ACT 4647	Accounting Software Package	3

Others

Students pursuing Track D must select four major elective courses.

Code	Subjects	Credits
ACT 3606	Public Sector and Fund Accounting	3
ACT 3623	Cost Management	3
ACT 3624	Real Estate Accounting	3
ACT 3625	Hospital Accounting	3
ACT 3626	Hotel Accounting	3
ACT 3629	Profits Planning and Control	3
ACT 4605	International Accounting	3
ACT 4609	Accounting Theory	3
ACT 4612	Independent Study	3
ACT 4624	Seminar in Management Accounting	3
ACT 4641	Problems in Auditing	3
ACT 4643	Seminar in Auditing	3
ACT 4647	Accounting Software Package	3
ACT 4648	EDP Auditing	3
ACT 4649	Accounting Internship (135 Hours)	3

PLAN B – Business Concentration Courses *12 Credits*

Students pursuing PLAN B must select a concentration in other business areas and study the specified courses.

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3

Finance and Banking

FIN 3711	Investment	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3






Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3

C. Free Elective Courses ***6 Credits***

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore) During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Year (Junior and Senior) During the junior and senior year, students who select the Accounting Major follow the Accounting program of studies:

- Twelve Major Required Courses
- Four Concentration Courses
- Plan A: Major Concentration Courses
- or Plan B: Business Concentration Courses
- Two Free Elective Courses

FIRST YEAR
First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3
	Total	***19***

Second Semester

Code	Subjects	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Code	Subjects	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***

FOURTH YEAR
First Semester

Code	Subjects	Credits
ACT 4607	Advanced Accounting I	3
ACT 4608	Advanced Accounting II	3
ACT 4646	Accounting Information Systems	3
MGT 4914	Entrepreneurship	3
	Two Plan A / Plan B Course	6
	Total	***18***

THIRD YEAR
First Semester

Code	Subjects	Credits
ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3608	Financial Report and Financial Statement Analysis	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
	Total	***18***

Second Semester

Code	Subjects	Credits
ACT 3615	Taxation II	3
ACT 3643	Auditing	3
ACT 3644	Internal Control and Audit	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
	Total	***18***

Second Semester

Code	Subjects	Credits
ACT 4611	Seminar in Accounting	3
	Two Plan A / Plan B Course	6
	Two Free Elective Course	6
	Total	***15***

DEPARTMENT OF **BUSINESS INFORMATION SYSTEMS**

Degree Conferred: **Bachelor of Business Administration (Business Information Systems)**
B.B.A. (Business Information Systems)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth.*
- *Have knowledge and thorough understanding of concepts, frameworks, principles, theories and necessary technical skills to work as a full potential business information systems professional.*
- *Able to understand and apply technology knowledge to every aspect of the management and the organization.*
- *Able to interpret information, make business analysis and forecasting useful for business decision making.*
- *Flexible, competent and well-rounded in confronting and solving business problems.*
- *Able to work as a team and motivate others to work.*
- *Able to communicate effectively and have good information and technology skills.*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

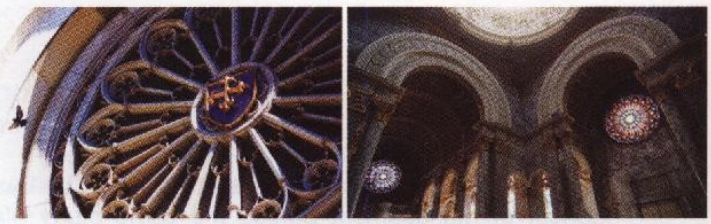
Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses **96 Credits**

Business Core Courses ***45 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3



Major Required Courses ***42 Credits***

BIS 2180	Information Technology	3
BIS 3315	Programming and Algorithms	3
BIS 3348	Principles of Multimedia	3
BIS 3516	Object-Oriented Programming	3
BIS 3617	Web Design and Programming	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4625	Computer Organization	3
BIS 4675	Information Systems Project Management	3
BIS 4697	Current Topics in Business Information Systems	3
BIS 4787	Data Structure	3
BIS 4858	Information Systems Security	3
BIS 4996	BIS Senior Project	3

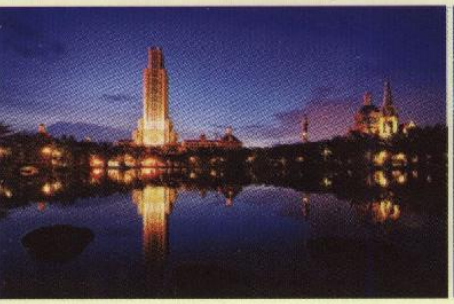
Major Elective Courses ***9 Credits***

Students can select any three courses from the following.

BIS 3567	Human Computer Interaction	3
BIS 3577	Online Media for Business	3
BIS 3587	Principles of Electronic Commerce	3
BIS 3588	Digital Business Enterprise	3
BIS 3589	Analysis Tools in Finance and Accounting	3
BIS 3618	Selected Programming Language	3
BIS 3647	Digital VDO Editing	3
BIS 3687	Electronic Banking and Payment Systems	3
BIS 4698	Selected Topics in Business Information Systems	3
BIS 4699	Advanced Topics in Business Information Systems	3
BIS 4718	Web Applications Development	3
BIS 4747	Graphics and Animation	3
BIS 4748	3-D Modeling and Animation	3
BIS 4758	Local Area Network	3
BIS 4766	Business Process Reengineering	3
BIS 4788	Data Warehouse and Data Mining	3
BIS 4789	Mobile Applications	3
BIS 4848	Integrated Multimedia Applications	3
BIS 4875	Strategic Technology Management	3
BIS 4878	Software Risk Management	3
BIS 4886	Business Information Systems Directed Study I	3
BIS 4887	Business Information Systems Directed Study II	3
BIS 4897	Seminar in Business Information Systems	3
TS 4261	Internetworking Workshop I	4
TS 4262	Internetworking Workshop II	4

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and career preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Business Information Systems Major follow the Business Information Systems program of studies:

1. Fourteen Major Required Courses
2. Three Major Elective Courses
3. Two Free Elective Courses

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***





THIRD YEAR
First Semester

Course Code	Course Title	Credits
BIS 3315	Programming and Algorithms	3
BIS 3340	Computer Tools in Research	0
BIS 3348	Principles of Multimedia	3
BIS 3617	Web Design and Programming	3
BIS 3635	Database Systems	3
FIN 3701	Corporate Finance	3
	One Major Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BIS 3516	Object-Oriented Programming	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information System Analysis and Design	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
	Total	***18***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
BIS 4625	Computer Organization	3
BIS 4675	Information Systems Project Management	3
BIS 4697	Current Topics in Business Information Systems	3
BIS 4787	Data Structure	3
MGT 4914	Entrepreneurship	3
	One Major Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BIS 4858	Information Systems Security	3
BIS 4996	BIS Senior Project	3
	One Major Elective Course	3
	One Free Elective Course	3
	One Free Elective Course	3
	Total	***15***

DEPARTMENT OF **HOSPITALITY AND TOURISM MANAGEMENT**

Degree Conferred: **Bachelor of Business Administration (Hospitality and Tourism Management)**
B.B.A. (Hospitality and Tourism Management)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth*
- *Posses knowledge of the principles and theories of hospitality and tourism management.*
- *Understand and have awareness of hospitality and tourism management professional standards and ethics*
- *Able to apply analytical tools and conceptual frameworks to solve business problems.*
- *Equipped with necessary leadership, managerial, and technical skills needed in today's organizations*
- *Able to work as a team and motivate others to work*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

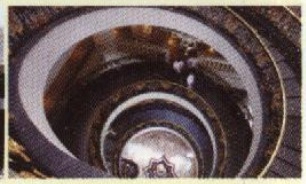
Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3

MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3001	Sustainable Tourism	3
HTM 3205	Marketing in Hospitality and Tourism	3
HTM 3211	Food and Beverage Management	3
HTM 3002	Business Operation and Leadership in Hospitality and Tourism	3
HTM 3003	Information Technology in Hospitality and Tourism	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 4210	Strategic Management in Hospitality and Tourism	3

Concentration Courses

Students must choose one of the three following plans as their concentration course.

Plan A:	Concentration Courses in Hospitality Management	15 Credits
Or Plan B:	Concentration Courses in Tourism Management	15 Credits
Or Plan C:	Business Concentration Courses	15 Credits

PLAN A – Concentration Courses in Hospitality Management 15 Credits

Students pursuing PLAN A must study the five specified courses.

HTM 4111	Food and Beverage Service	3
HTM 4112	Kitchen Operation	3
HTM 4301	Room Division Management	3
HTM 4302	Event Management	3
HTM 4303	Service Management	3

PLAN B – Concentration Courses in Tourism Management 15 Credits

Students pursuing PLAN B must study the five specified courses.

HTM 4401	Tourism Policy and Development	3
HTM 4402	Tourism Destination Management	3
HTM 4403	Tour Guiding and Operation in Practice	3
HTM 4404	Cultural Heritage Tourism	3
HTM 4405	International Tourism Studies	3

PLAN C – Business Concentration Courses

Students pursuing PLAN C must select a concentration in other business areas and study the five specified courses.

Business Information System

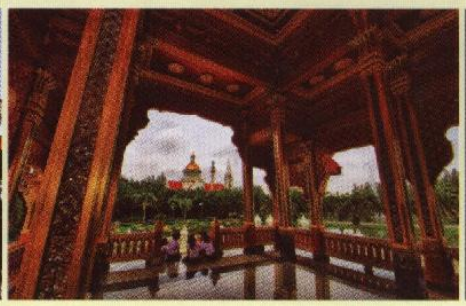
BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project management	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3


Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Comparative Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

C. Free Elective Courses **9 Credits**

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the pre-requisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Hospitality and Tourism Management Major follow the Hospitality and Tourism Management program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   Plan A: Major Concentration Courses in Hospitality Management
   Or Plan B: Major Concentration Courses in Tourism Management
   Or Plan C: Business Concentration Courses
3. Three Free Elective Courses

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***





THIRD YEAR
First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
	Two Free Elective Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
HTM 3211	Food and Beverage Management	3
HTM 3001	Sustainable Tourism	3
HTM 3205	Marketing in Hospitality and Tourism	3
	Total	***18***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
HTM 3002	Business Operation and Leadership in Hospitality and Tourism	3
HTM 3003	Information Technology in Hospitality and Tourism	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 4210	Strategic Management in Hospitality and Tourism	3
	Two Plan A / Plan B / Plan C Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 4914	Entrepreneurship	3
	Three Plan A / Plan B / Plan C Courses	9
	One Free Elective Course	3
	Total	***15***



DEPARTMENT OF **INTERNATIONAL BUSINESS MANAGEMENT**

Degree Conferred: **Bachelor of Business Administration (International Business Management)**
B.B.A. (International Business Management)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth.*
- *Have knowledge of the principles and theories in the functional areas and able to apply with respect to international business,*
- *Possess analytical tools and practical knowledge to acquire proficiency in international business from an interdisciplinary perspective*
- *Able to apply analytical tools and conceptual frameworks to solve business problems.*
- *Able to work as a team and motivate others to work.*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills.*

A. General Education Courses ***40 Credits***

Language Courses **15 Credits**

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For International students)	3

Social Science Courses **13 Credits**

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses **6 Credits**

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses **6 Credits**

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses ***93 Credits***

Business Core Courses **48 Credits**

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses **30 Credits**

BIS 3588	Digital Business Enterprise	3
FIN 4812	International Finance	3
MKT 3620	Global Marketing	3
IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4711	International Human Resource Management	3
IBM 4715	Designing and Managing Global Operations	3
IBM 4809	International Business Research	3
IBM 4811	International Strategic Management	3

Concentration Courses

Students must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses	15 Credits
Or Plan B: Business Concentration Courses	15 Credits
Or Plan C: Major Elective/Foreign Language Courses	15 Credits

PLAN A:

Major Concentration Courses ***15 Credits***

Students pursuing PLAN A must select the concentration in the major area and study the five specified courses.

International Marketing

IBM 3642	International Buyer Behavior	3
IBM 3643	International Marketing Communications	3
IBM 3841	International Pricing Strategy	3
IBM 4840	Global Supply Chain Management	3
IBM 4843	International Product and Brand Planning	3

PLAN B:

Business Concentration Courses ***15 Credits***

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Accounting

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
ACT 3629	Profits Planning and Control	3

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

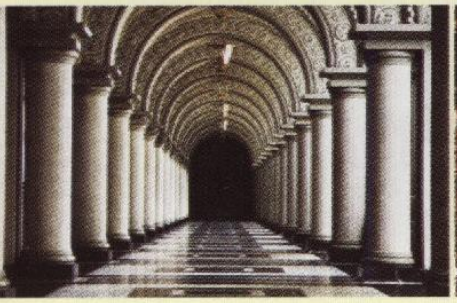
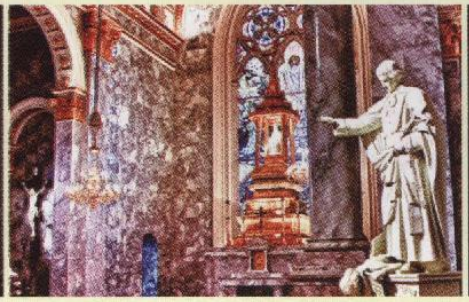
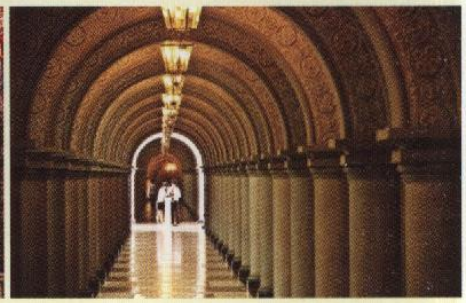
FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Comparative Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

PLAN C:
MAJOR ELECTIVE COURSES / FOREIGN LANGUAGE COURSES

Students pursuing PLAN C must select any five major elective/foreign Language courses.

ACT 4605	International Accounting	3
BIS 3587	Principles of Electronic Commerce	3
ECO 3716	International Trade	3
FIN 3724	Financial Feasibility Planning	3
IBM 3642	International Buyer Behavior	3
IBM 3643	International Marketing Communications	3
IBM 3722	Legal and Ethical Issues in International Business	3
IBM 3723	International Relations	3
IBM 3841	International Pricing Strategy	3
IBM 4820	International Cooperative Strategies	3
IBM 4840	Global Supply Chain Management	3
IBM 4841	International Services Marketing	3
IBM 4843	International Product and Brand Planning	3
IBM 4921	Individual Research	3
IBM 4923	Seminar in Regional Studies	3
MGT 4916	Negotiation Strategy	3

Business French

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 3535	Basic Conversation in Business French I	3
FR 3536	Basic Writing in Business French I	3

Business Chinese

CN 0400	Chinese for Beginners I	3
CN 0401	Chinese for Beginners II	3
CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 2401	Chinese II	3

Business Japanese

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3
	One Elective Course	3

Any course form the Business Japanese Department upon completion of the prerequisites (if any)

C. Free Elective Courses — *9 Credits*

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the International Business Management Major follow the International Business Management program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   Plan A: Major Concentration Courses
   Or Plan B: Business Concentration Courses
   Or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR
First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3
	Total	***19***

Second Semester

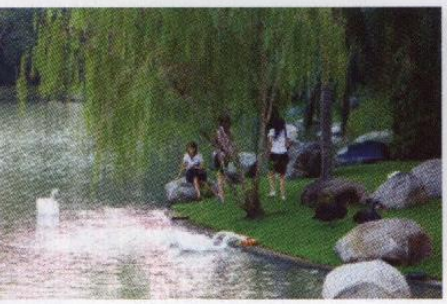
Code	Subjects	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

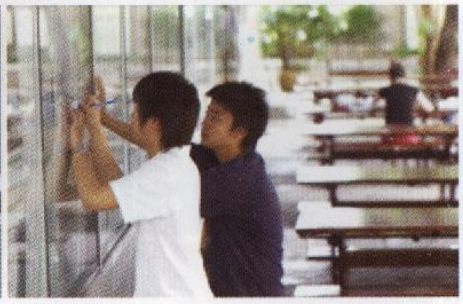
SECOND YEAR
First Semester

Code	Subjects	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***



THIRD YEAR
First Semester

Code	Subjects	Credits
BIS 3340	Computer Tools in Research	0
BIS 3588	Digital Business Enterprise	3
FIN 3701	Corporate Finance	3
IBM 3711	Comparative Management	3
MKT 3620	Global Marketing	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

FOURTH YEAR
First Semester

Code	Subjects	Credits
FIN 4812	International Finance	3
IBM 4711	International Human Resource Management	3
IBM 4715	Designing and Managing Global Operations	3
IBM 4809	International Business Research	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Courses	3
	Total	***18***

Second Semester

Code	Subjects	Credits
IBM 4811	International Strategic Management	3
MGT 4914	Entrepreneurship	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Course	3
	One Free Elective Course	3
	Total	***15***



DEPARTMENT OF
INDUSTRIAL MANAGEMENT

Degree Conferred: **Bachelor of Business Administration (Industrial Management)**
B.B.A. (Industrial Management)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows*

- *Morally sound, committed to acting justly and open to further growth*
- *Posses knowledge of the principles and theories in the functional areas and able to apply with respect to industry.*
- *Possess analytical tools and practical knowledge to acquire proficiency in industry from an interdisciplinary perspective.*
- *Able to apply analytical tools and conceptual frameworks to solve business problems.*
- *Able to work as a team and motivate others to work.*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills.*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

IDM 3200	Quantitative Analysis	3
IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4202	Production Costing and Budgeting	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3
IDM 4208	Project Analysis and Management	3
IDM 4302	Industrial Strategic Management	3
IDM 4501	Seminar in Industrial Management	3

Concentration Courses ***15 Credits***

Student must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses
Or Plan B: Business Concentration Courses
Or Plan C: Major Elective Courses

PLAN A – Major Concentration Courses

Students pursuing PLAN A must select one of the three following concentrations in the major area and study the five specified courses.

Logistics and Supply Chain Management

IDM 3306	Warehousing and Material Handling	3
IDM 3307	Transportation and Distribution Management	3
IDM 3308	Supply Chain Relationship Management	3
IDM 4301	Information Technology in Supply Chain	3
MKT 3515	Purchasing and Supply Chain Management	3

Manufacturing Management

IDM 3202	Motion and Time Study	3
IDM 3402	Facility Management	3
IDM 3403	Industrial Engineering Management	3
IDM 4301	Information Technology in Supply Chain	3
IDM 4401	Technology and Innovation Management	3

PLAN B – Business Concentration Courses

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Accounting

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
ACT 3629	Profits Planning and Control	3

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

Insurance

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4302	Accident, Group and Health Insurance	3





International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Real Estate

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3

PLAN C – Major Elective Courses

Students pursuing PLAN C must select any five courses from the following list.

IDM 3202	Motion and Time Study	3
IDM 3306	Warehousing and Material Handling	3
IDM 3307	Transportation and Distribution Management	3
IDM 3308	Supply Chain Relationship Management	3
IDM 3402	Facility Management	3
IDM 3403	Industrial Engineering Management	3
IDM 4207	Internship in Industrial Management (300 Hours)	3
IDM 4301	Information Technology in Supply Chain	3
IDM 4401	Technology and Innovation Management	3
MGT 3903	Leadership	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3
MGT 4928	Employment Relations and Labor Law	3
MKT 3515	Purchasing and Supply Chain Management	3
MKT 3530	Consumer Behavior	3
MKT 3803	Retail Management	3
MKT 4730	Marketing Management	3
MKT 4806	Product and Brand Management	3
MKT 4810	Export-Import Management	3

Foreign Language Courses
Business Chinese

CN 0400	Chinese for Beginners I	3
CN 0401	Chinese for Beginners II	3
CN 1400	Introduction to Chinese	3
CN1401	Chinese I	3
CN 2401	Chinese II	3

Business French

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 3535	Basic Conversation in Business French I	3
FR 3536	Basic Writing in Business French I	3

Business Japanese

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3
	One Elective Course	3

C. Free Elective Courses **9 Credits**

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and career preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Industrial Management Major
follow the Industrial Management program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   Plan A: Major Concentration Courses
   or Plan B: Business Concentration Courses
   or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
MKT 3905	Operations Management	3
MKT 2280	Principles of Marketing	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 3907	Business Communication	3
IDM 3200	Quantitative Analysis	3
IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
IDM 4201	Manufacturing Planning and Control	3
IDM 4202	Production Costing and Budgeting	3
IDM 4203	Quality Management	3
MGT 3940	Business Research Methodology	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
IDM 4206	Industrial Environmental Management	3
IDM 4208	Project Analysis and Management	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 4914	Entrepreneurship	3
IDM 4302	Industrial Strategic Management	3
IDM 4501	Seminar in Industrial Management	3
	Two Free Elective Courses	6
	Total	***15***



DEPARTMENT OF
REAL ESTATE

Degree Conferred: **Bachelor of Business Administration (Real Estate)**
B.B.A. (Real Estate)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth.*
- *Possess knowledge of real estate principles and essential methods, analytical minds and practical knowledge to make sound real estate business decision*
- *Demonstrate flexibility in different situations and competence in confronting and solving business problems.*
- *Able to work as a team and motivate others to work.*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For International students)	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3





B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3
REM 3212	Real Estate Finance	3
REM 3213	Real Estate Appraisal	3
REM 3214	Principles of Real Estate Investment Analysis	3
REM 4112	Computer Applications in Real Estate	3
REM 4113	Principles of Property Management	3

Concentration Courses

Students must choose one of the three following plans as their concentration courses.

Plan A:	Major Concentration Courses	15 Credits
Or Plan B:	Business Concentration Courses	15 Credits
Or Plan C:	Major Elective Courses	15 Credits

PLAN A – Major Concentration Courses 15 Credits

Students pursuing PLAN A must select one of the three following concentrations in the major area and study the five specified courses.

Real Estate Development

REM 4131	Real Estate Project Management	3
REM 4132	Advanced Real Estate Investment Analysis	3
REM 4191	Seminar in Real Estate Business	3
REM 4231	Real Estate Marketing and Brokerage Management	3
REM 4381	Internship in Real Estate Business (300 hours)	3

Property Valuation

REM 4141	Advanced Real Estate Appraisal	3
REM 4142	Professional Appraisal Practice and Ethics	3
REM 4192	Seminar in Property Valuation	3
REM 4241	Valuation for Special Purposes	3
REM 4382	Internship in Real Estate Appraisal (300 hours)	3

Property Management

REM 4151	Corporate Real Estate Management	3
REM 4152	Facilities Operations and Maintenance	3
REM 4193	Seminar in Property Management	3
REM 4251	Income-producing Property Management	3
REM 4383	Internship in Property Management (300 hours)	3

PLAN B – Business Concentration Courses 15 Credits

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Accounting

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
ACT 3629	Profits Planning and Control	3

Business Economics

ECO 3711	Intermediate Microeconomics	3
ECO 3712	Intermediate Macroeconomics	3
ECO 3716	International Trade	3
ECO 4711	International Macroeconomics	3
ECO 4726	Business and Government	3

Business Information Systems

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

Industrial Management

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3

Insurance

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4302	Accident, Group and Health Insurance	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

PLAN C – Major Elective Courses

Students pursuing PLAN C must select any five major elective courses.

REM 4131	Real Estate Project Management	3
REM 4132	Advanced Real Estate Investment Analysis	3
REM 4141	Advanced Real Estate Appraisal	3
REM 4142	Professional Appraisal Practice and Ethics	3
REM 4151	Corporate Real Estate Management	3
REM 4152	Facilities Operations and Maintenance	3
REM 4191	Seminar in Real Estate Business	3
REM 4192	Seminar in Property Valuation	3
REM 4193	Seminar in Property Management	3
REM 4221	Directed Study in Real Estate	3
REM 4222	Capital Markets Related to Real Estate Business	3
REM 4231	Real Estate Marketing and Brokerage Management	3
REM 4241	Valuation for Special Purposes	3
REM 4251	Income-producing Property Management	3
REM 4381	Internship in Real Estate Business (300 hours)	3
REM 4382	Internship in Real Estate Appraisal (300 hours)	3
REM 4383	Internship in Property Management (300 hours)	3

C. Free Elective Courses **9 Credits**

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and career preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Real Estate Major follow the Real Estate program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   Plan A: Major Concentration Courses
   or Plan B: Business Concentration Courses
   or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***







SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2202	Ethics	3
GE 2101	World Civilization	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***

THIRD YEAR
First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
MGT 3905	Operations Management	3
REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
REM 3211	Principles of Real Estate Development	3
REM 3212	Real Estate Finance	3
REM 3213	Real Estate Appraisal	3
REM 4113	Principles of Property Management	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
REM 3214	Principles of Real Estate Investment Analysis	3
REM 4112	Computer Applications in Real Estate	3
	One Free Elective Course	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MGT 4914	Entrepreneurship	3
	One Plan A / Plan B / Plan C Course	3
	One Plan B / Plan C Course*	3
	One Free Elective Course	3
	One Free Elective Course	3
	Total	***15 or 12***

*** Plan A – Internship in Summer Session**

Summer Session (Only for Plan A)

Course Code	Course Title	Credits
REM 4381	Internship in Real Estate Business	3 (300 hours)
or REM 4382	Internship in Real Estate Appraisal	3 (300 hours)
or REM 4383	Internship in Property Management	3 (300 hours)
	Total	***3 (300 hours)***

DEPARTMENT OF **INSURANCE**

Degree Conferred: **Bachelor of Business Administration (Insurance)**
B.B.A. (Insurance)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- *Morally sound, committed to acting justly and open to further growth.*
- *Possess knowledge of the principles and theories of insurance and able to apply them to insurance business,*
- *Understand and have awareness of insurance professional standards and ethics.*
- *Able to apply analytical tools and conceptual frameworks to solve business problems.*
- *Able to work as a team and motivate others to work.*
- *Have positive attitude, interpersonal, communication and presentation skills, IT skills and entrepreneurial skills.*

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3



B. Specialized Courses **93 Credits**

Business Core Courses ***48 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
FIN 2700	Money, Banking and Financial Markets	3
FIN 3701	Corporate Finance	3
IBM 2702	International Business Environment	3
MGT 2900	Principles of Management	3
MGT 3905	Operations Management	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
MGT 4914	Entrepreneurship	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

INS 3101	Principles of Risk Management and Insurance	3
INS 3102	Insurance Law	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4104	Reinsurance	3
INS 4203	Marine and Aviation Insurance	3
INS 4206	Essentials of Risk Management	3
INS 4302	Accident, Group and Health Insurance	3
INS 4303	Life Assurance Underwriting	3

Concentration Courses

Students must choose one of the three following plans as their concentration courses.

Plan A: Major Concentration Courses 15 Credits
Or Plan B: Business Concentration Courses 15 Credits
Or Plan C: Major Elective Courses 15 Credits

PLAN A – Major Concentration Courses 15 Credits

Students pursuing PLAN A must select one of the following concentration in the major area and study the five specified courses.

Property and Casualty Insurance

INS 3203	Engineering Insurance	3
INS 4103	Insurance Marketing	3
INS 4204	Property and Casualty Insurance Accounting and Finance	3
INS 4205	Survey and Claim Management in Property and Casualty Insurance	3
INS 4207	Insurance Management	3

Life Assurance

INS 4304	Life Assurance Mathematics	3
INS 4305	Claim Management in Life Assurance	3
INS 4306	Life Assurance and Financial Planning	3
INS 4307	Life Assurance Agency Administration	3
INS 4308	Managing for Solvency and Profitability in Life Assurance	3

PLAN B – Business Concentration Courses 15 Credits

Students pursuing PLAN B must select a concentration in other business areas and study the five specified courses.

Accounting

ACT 3602	Intermediate Accounting I	3
ACT 3603	Intermediate Accounting II	3
ACT 3614	Taxation I	3
ACT 3622	Cost Accounting	3
ACT 3629	Profits Planning and Control	3

Business Information System

BIS 3315	Programming and Algorithms	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial Management

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Real Estate

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3

PLAN C – Major Elective Courses

Students pursuing PLAN C must select any five major elective courses.

INS 3203	Engineering Insurance	3
INS 4103	Insurance Marketing	3
INS 4105	Seminar in Insurance	3
INS 4106	Information Management in Insurance	3
INS 4204	Property and Casualty Insurance Accounting and Finance	3
INS 4205	Survey and Claim Management in Property and Casualty Insurance	3
INS 4207	Insurance Management	3
INS 4208	Internship in Property and Casualty Insurance (240 Hours)	3
INS 4209	Directed Studies in Property & Casualty Insurance	3
INS 4210	Risk Control and Risk Financing	3
INS 4304	Life Assurance Mathematics	3
INS 4305	Claim Management in Life Assurance	3
INS 4306	Life Assurance and Financial Planning	3
INS 4307	Life Assurance Agency Administration	3
INS 4308	Managing for Solvency and Profitability in Life Assurance	3
INS 4309	Internship in Life Assurance (240 Hours)	3
INS 4310	Directed Studies in Life Assurance	3
BIS 3587	Principles of Electronic Commerce	3
FIN 3724	Financial Feasibility Planning	3
FIN 3725	Managerial Economics	3

C. Free Elective Courses **9 Credits**

Students can take free elective courses of 9 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First and Second Year (Freshmen and Sophomore)
During the freshmen year, all students in Martin de Tours School of Management pursue the same study plan consisting of general education courses and business core courses, which provide them with the basic knowledge on all the disciplines in business. The study plan also prepares the students with adequate knowledge to select a concentration that suits his/her ability, background, and career preferences.

Third and Fourth Year (Junior and Senior)
During the junior and senior years, students who select the Insurance Major follow the Insurance program of studies:

1. Ten Major Required Courses
2. Five Concentration Courses
   - Plan A: Major Concentration Courses
   - Or Plan B: Business Concentration Courses
   - Or Plan C: Major Elective Courses
3. Three Free Elective Courses

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1400	Business Law I	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1401	Business Law II	3
BG 2200	Statistics II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 2180	Information Technology	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2101	World Civilization	3
GE 2202	Ethics	3
IBM 2702	International Business Environment	3
MKT 2280	Principles of Marketing	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
BIS 3340	Computer Tools in Research	0
FIN 3701	Corporate Finance	3
INS 3101	Principles of Risk Management and Insurance	3
INS 3102	Insurance Law	3
MGT 3905	Operations Management	3
	One Free Elective Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
MGT 3907	Business Communication	3
MGT 3940	Business Research Methodology	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

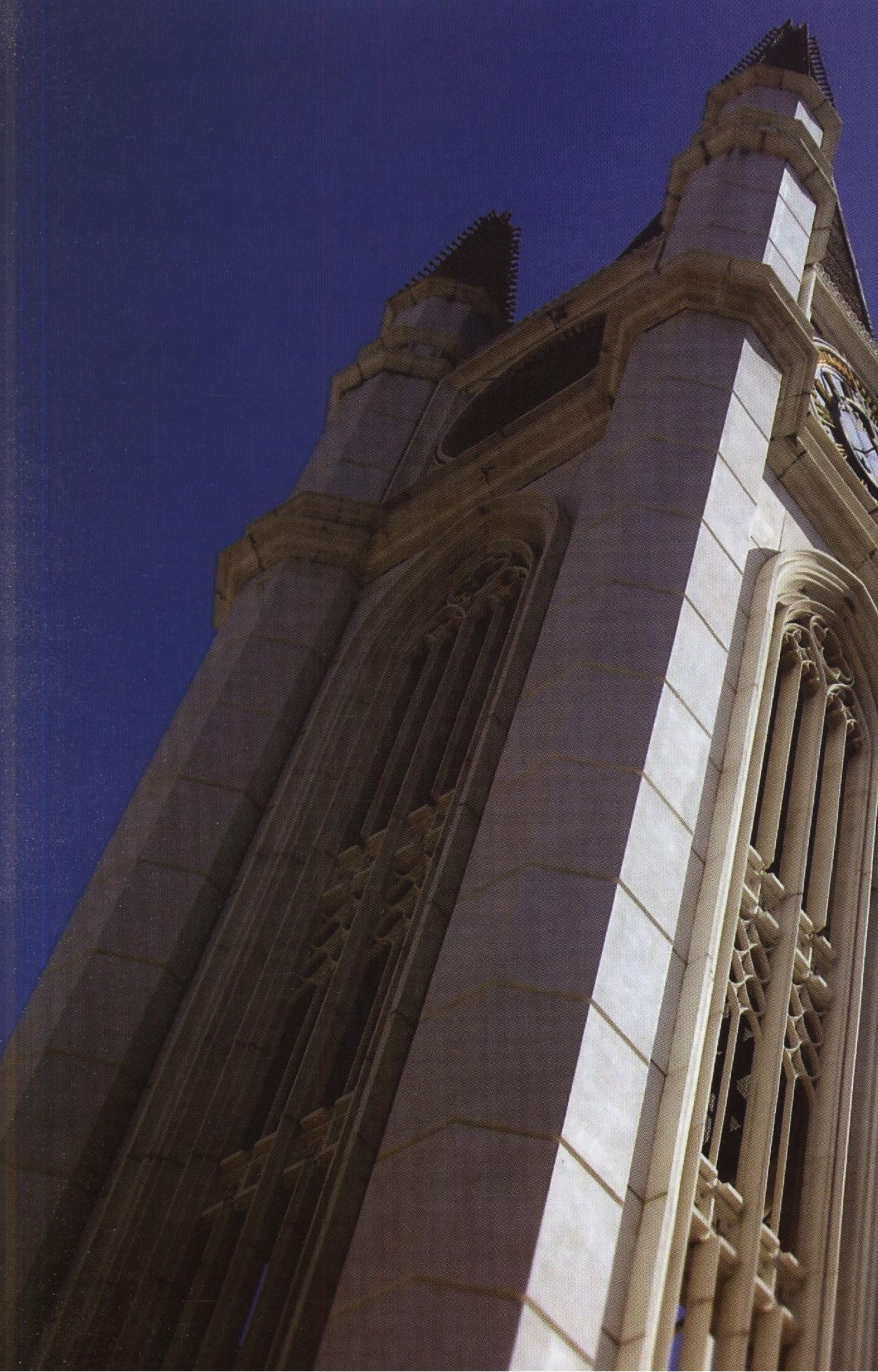
FOURTH YEAR

First Semester

Course Code	Course Title	Credits
INS 4203	Marine and Aviation Insurance	3
INS 4302	Advanced Life and Health Insurance	3
INS 4303	Life Assurance Underwriting	3
MGT 4914	Entrepreneurship	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
INS 4206	Essential of Risk Management	3
INS 4104	Reinsurance	3
	One Plan A / Plan B / Plan C Course	3
	One Plan A / Plan B / Plan C Course	3
	One Free Elective Course	3
	Total	***15***



DEPARTMENT OF
BUSINESS ECONOMICS

Degree Conferred: **Bachelor of Economics (Business Economics)**
(Business Economics)

Program Objectives: *To produce graduates who have the characteristics, knowledge and skills as follows:*

- Morally sound, committed to acting justly and open to further growth.
- Have essential concepts, frameworks, core body of knowledge, and necessary technical skills to work as a full potential economic professional.
- Able to understand and apply economic reasoning to every aspect of the management and the organization.
- Able to interpret economic information, make economic analysis and forecasting useful for business decision making.
- Flexible, competent and well-rounded in confronting and solving economic problems.
- Able to work as a team and motivate others to work.
- Able to communicate effectively and have good IT skills.




A. General Education Courses **45 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3

Social Science Courses ***6 Credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***9 Credits***

GE 2101	World Civilization	3
GE 2103	Art of Reasoning	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***15 Credits***

BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
BG 1230	Calculus	3
BG 2200	Statistics II	3
GE 1301	Environmental Science	3

B. Specialized Course **90 Credits**

Business Core Courses ***33 Credits***

ACT 1600	Fundamentals of Financial Accounting	3
ACT 2620	Fundamentals of Managerial Accounting	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
BIS 3340	Computer Tools in Research	0
ECO 1401	Economic Reasoning	3
ECO 2501	Principles of Microeconomics	3
ECO 2502	Principles of Macroeconomics	3
ECO 2503	Economy, Society and Government	3
FIN 3701	Corporate Finance	3
MGT 2900	Principles of Management	3
MGT 3940	Business Research Methodology	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***30 Credits***

ECO 3711	Intermediate Microeconomics	3
ECO 3712	Intermediate Macroeconomics	3
ECO 3713	Economics of Money and Banking	3
ECO 3714	Mathematical Economics	3
ECO 3715	Introduction to Econometrics	3
ECO 3716	International Trade	3
ECO 3717	Managerial Economics	3
ECO 4711	International Macroeconomics	3
ECO 4712	Economics of Strategy	3
ECO 4911	Seminar in Economics	3

Major Elective Courses ***12 Credits***

ECO 3721	Industrial Organization	3
ECO 3722	Business Cycle and Forecasting	3
ECO 3723	Public Finance	3
ECO 3724	Comparative Economic Systems	3
ECO 3725	Financial Economics	3
ECO 4721	Project Evaluation	3
ECO 4722	Economics of Human Resources	3
ECO 4723	Agriculture Economics and Agri-business	3
ECO 4724	Economics of E-business	3
ECO 4725	Economics of Sustainability	3
ECO 4726	Business and Government	3
REM 3113	Real Estate Economics	3

Business Concentration Courses ***15 Credits***

Student must choose ONE of the following groups of concentration as their business concentration:

Finance and Banking

FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3713	Business Analysis and Valuation	3
FIN 4813	Financial Management	3
FIN 4815	Bank Management	3

Hospitality and Tourism Management

HTM 3101	Introduction to Hotel Management	3
HTM 3102	Introduction to Tourism Industry Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3204	Human Resource Management in Hospitality and Tourism	3
HTM 3205	Marketing for Hospitality and Tourism	3

International Business Management

IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3



Insurance

INS 3101	Principles of Risk Management and Insurance	3
INS 3201	Property Insurance	3
INS 3202	Casualty Insurance	3
INS 3301	Principles of Life Assurance	3
INS 4206	Essentials of Risk Management	3

Management

MGT 3915	Project Management	3
MGT 3917	Innovation and Change Management	3
MGT 3922	Introduction to New Ventures	3
MGT 4910	Productivity and Quality Management	3
MGT 4916	Negotiation Strategy	3

Marketing

MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Real Estate

REM 3111	Principles of Real Estate	3
REM 3114	Building Design and Construction Techniques	3
REM 3211	Principles of Real Estate Development	3
REM 3212	Real Estate Finance	3
REM 3213	Real Estate Appraisal	3

C. Free Electives Courses **9 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any)

STUDY PLAN

First and Second Years (Freshmen and Sophomore)
During the freshmen year, all students in Business Economics pursue the same study plan consisting of general education courses and business core courses, which provides them with the basic knowledge on all the disciplines in Economics and Business. The study plan also prepares the students with adequate knowledge to select a business concentration that suits his/her ability, background, and preferences.

Third and Fourth Years (Junior and Senior)
During the junior and senior years, Business Economics students follow the Economics program of studies:

1. Ten Major Required Courses
2. Four Major Electives Courses
3. Five Business Concentration Courses
4. Three Free Elective Courses

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
BG 1201	Statistics I	3
ECO 1401	Economic Reasoning	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3
GE 2103	Art of Reasoning	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ACT 1600	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 1230	Calculus	3
BG 2200	Statistics II	3
BIS 1141	Business Software Applications	0
ECO 2501	Principles of Microeconomics	3
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
ACT 2620	Fundamentals of Managerial Accounting	3
BG 2000	English III	3
GE 1301	Environmental Science	3
BIS 2180	Information Technology	3
ECO 2502	Principles of Macroeconomics	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BIS 3340	Computer Tools in Research	0
ECO 2503	Economy, Society , and Government	3
ECO 3711	Intermediate Microeconomics	3
ECO 3713	Economics of Money and Banking	3
GE 2202	Ethics	3
MGT 2900	Principles of Management	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
ECO 3712	Intermediate Macroeconomics	3
ECO 3714	Mathematical Economics	3
FIN 3701	Corporate Finance	3
GE 2101	World Civilization	3
MGT 3940	Business Research Methodology	3
	One Major Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ECO 3715	Introduction to Econometrics	3
ECO 3716	International Trade	3
ECO 3717	Managerial Economics	3
MGT 2404	Managerial Psychology	3
	Two Business Concentration Courses	6
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
ECO 4711	International Macroeconomics	3
ECO 4712	Economics of Strategy	3
	Two Business Concentration Courses	6
	Two Major Elective Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ECO 4911	Seminar in Economics	3
	One Business Concentration Course	3
	One Major Elective Course	3
	Three Free Elective Courses	9
	Total	***18***


MUSEUM

SCHOOL OF ARTS

Curriculum Structure

Courses	Business English	Business French	Business Chinese	Business Japanese	Chinese for Economy and Trade
A. General Education Courses	43	40	37	40	30
- Language Courses	15	15	15	15	15
- Social Science Courses	16	13	13	13	9
- Humanities Courses	6	6	3	6	3
- Science and Mathematics Courses	6	6	6	6	3
B. Specialized Courses	93	96	99	96	99
- Required Core Courses	21	33	21	30	-
- Core Courses	-	-	-	-	63
- Elective Core Courses	9	-	-	-	-
- Major Required Course	36	36	45	39	30
- Major Elective Courses	9	9	15	9	6
- Minor Courses	18	18	18	18	-
C. Free Elective Courses	6	6	6	6	6
Total Credits	***142***	***142***	***142***	***142***	***135***

GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Arts upon students who meet all of the following requirement:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline

DEPARTMENT OF BUSINESS ENGLISH

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows

- Have a sense of social and self responsibility and become an ethical citizen of the society.
- Have English proficiency necessary for business executions and be well-rounded in terms of inter-cultural communication.
- Demonstrate skills and expertise in applying knowledge to real life context and solving problems creatively and efficiently.
- Able to work and communicate effectively with both Thai and international people with respect and courtesy.
- Able to use computer and other technologies in communicating and presenting information.

COURSES

A. General Education Courses **43 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***16 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1201	Information Literacy Skills	1
GE 1203	Society, Politics and Economics	3
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3

Humanities Courses ***6 Credits***

GE 1101	Thai Civilization	3
GE 2101	World Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses **93 Credits**

Required Core Courses ***21 Credits***

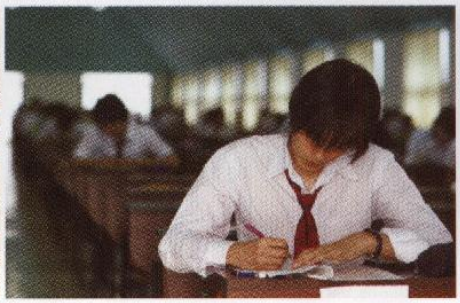
BG 1301	Fundamentals of Statistics	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
GE 2103	Art of Reasoning	3
GL 1101	Elements of Spoken Language	3
GL 3102	Introduction to Linguistics	3
GL 3103	Language, Culture, and Behavior	3
MGT 1101	Introduction to Business	3

Elective Core Courses ***9 Credits***

ACT 1601	Fundamentals of Financial Accounting	3
FIN 2700	Money, Banking and Financial Markets	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***36 Credits***

EN 2230	Listening and Speaking	3
EN 3210	Business Communication in English I	3
EN 3211	Business Communication in English II	3
EN 3240	Reading in Business English	3
EN 3270	Translation: English-Thai	3
or EN 4254	Academic Writing - *(only for international students)*	3
EN 3271	Translation: Thai-English	3
or EN 4252	Article Writing - *(only for international students)*	3
EN 4232	Business Conversation	3
EN 4233	Public Speaking in English	3
EN 4240	Reading in English Newspapers	3
EN 4241	Critical and Analytical Reading	3
EN 4250	Understanding, Note-taking and Summarizing	3
EN 4256	Introduction to Business Research Writing	3


Major Elective Courses ***9 Credits***

EN 3232	English Pronunciation I	3
EN 3233	English Pronunciation II	3
EN 3281	English for Tourism	3
EN 3282	English for Hotels	3
EN 3283	English for International Trade	3
EN 3284	English for Property Development	3
EN 3287	English for Office Management	3
EN 3288	English for Airline Business	3
EN 3289	English for Music Business	3
EN 4252	Article Writing	3
EN 4253	Introduction to Public Relations Writing	3
EN 4254	Academic Writing	3
EN 4262	Reading of Modern Viewpoints	3
EN 4266	Reading Thai Literary Works in English	3
EN 4267	Aspects of American Culture	3
EN 4272	Translation in Business English	3
EN 4291	Seminar in Business English	3

Minor Courses 18 Credits

Business Chinese

Minor Required Courses ***12 Credits***

CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 2401	Chinese II	3
CN 2402	Chinese III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business Chinese upon completion of the prerequisites (if any).

Business French

Minor Required Courses ***12 Credits***

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 2502	French III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business French upon completion of the prerequisites (if any).

Business Japanese

Minor Required Courses ***12 Credits***

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business Japanese upon completion of the prerequisites (if any).

Thai (Only for international students)

Minor Required Courses ***18 Credits***

TH 1500	Introduction to Thai	3
TH 1501	Thai Language I	3
TH 2501	Thai Language II	3
TH 2502	Thai Language III	3
TH 3501	Advanced Reading	3
TH 3502	Advanced Thai Writing	3

Business Information Systems

Minor Required Courses ***18 Credits***

BIS 3315	Programming and Algorithms	3
BIS 3349	Fundamentals of Computer Graphics	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

Minor Required Courses ***18 Credits***

FIN 3701	Corporate Finance	3
FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3714	Business Condition Analysis	3
FIN 4812	International Finance	3
FIN 4813	Financial Management	3





Hospitality and Tourism Management

Minor Required Courses ***18 Credits***

HTM 3001	Sustainable Tourism	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3205	Marketing in Hospitality and Tourism	3
HTM 3211	Food and Beverage Management	3

International Business Management

Minor Required Courses ***18 Credits***

IBM 2702	International Business Environment	3
IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial Management

Minor Required Courses ***18 Credits***

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3
MGT 3905	Operations Management	3

Management

Minor Required Courses ***18 Credits***

MGT 3901	Organization Theory	3
MGT 3903	Leadership	3
MGT 3917	Innovation and Change Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3

Marketing

Minor Required Courses ***18 Credits***

MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3837	Service and Customer Relationship Management	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Music Business

Minor Required Courses ***18 Credits***

MA 1300	Introduction to Applied Music	1
MA 1301	Applied Music I	2
MB 2421	Music Production Technology	3
MB 2521	Music Business I	3
MB 2522	Music Business II	3
MB 3512	Legal Aspects of Music Business	3
MB 4511	Music Business Artist/Project Management	3

Real Estate Management

Minor Required Courses ***18 Credits***

REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techiques	3
REM 3211	Principles of Real Estate Development	3
REM 4113	Principles of Property Management	3

C. Free Elective Courses 6 Credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

Free elective courses which are offered by Faculty of Arts:

GS 1302	Contemporary Science and Sustainability	3
GS 2103	Thai Buddhism	3
GS 2104	Contextual Religions	3
GS 2106	Logical Thinking and Application	3
GS 2205	Communication and Cultures	3
GS 2206	Personality Development	3
GS 2207	Sports, Health and Wellness Development	3
GS 2208	Thai Politics	3
GS3101	Applied Philosophy in Contemporary Society	3
GS 3401	Public Speaking in Thai	3






STUDY PLAN

FIRST YEAR
First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
GE 1101	Thai Civilization	3
GE 1201	Information Literacy Skills	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***16***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
BG 2401	Microeconomics	3
GE 1203	Society, Politics and Economics	3
GL 1101	Elements of Spoken Language	3
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Code	Subjects	Credits
BG 2000	English III	3
BG 2400	Macroeconomics	3
BIS 1141	Business Software Applications	0
GE 2101	World Civilization	3
GE 2103	Art of Reasoning	3
MGT 2404	Managerial Psychology	3
	One Elective Core Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
BIS 2180	Information Technology	3
EN 2230	Listening and Speaking	3
GE 2202	Ethics	3
	Two Elective Core Courses	6
	Total	***18***





THIRD YEAR
First Semester

Code	Subjects	Credits
EN 3210	Business Communication in English I	3
EN 3240	Reading in Business English	3
EN 3270	Translation: English-Thai	3
or EN 4254	Academic Writing - *(only for international students)*	3
GL 3102	Introduction to Linguistics	3
	Two Minor Courses	6
	Total	***18***

Second Semester

Code	Subjects	Credits
EN 3211	Business Communication in English II	3
EN 3271	Translation: Thai-English	3
or EN 4252	Article Writing - *(only for international students)*	3
EN 4232	Business Conversation	3
GL 3103	Language, Culture and Behavior	3
	One Major Elective Course	3
	One Minor Course	3
	Total	***18***

FOURTH YEAR
First Semester

Code	Subjects	Credits
EN 4240	Reading in English Newspapers	3
EN 4250	Understanding, Note-taking and Summarizing	3
	One Major Elective Course	3
	Two Minor Course	6
	One Free Elective Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
EN 4233	Public Speaking in English	3
EN 4241	Critical and Analytical Reading	3
EN 4256	Introduction to Business Research Writing	3
	One Major Elective Course	3
	One Minor Course	3
	One Free Elective Course	3
	Total	***18***



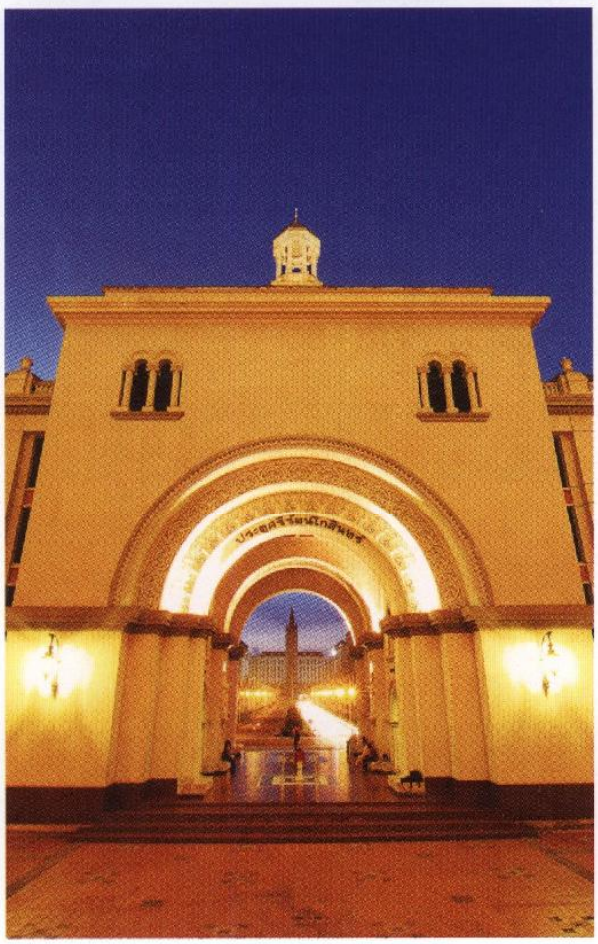


DEPARTMENT OF BUSINESS FRENCH

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have a sense of social and self responsibility and become an ethical citizen of the society.
- Have up-to-date and business language skills both in French and in English for listening, speaking, reading and writing through technologies.
- Demonstrate skills and expertise in applying the knowledge to real life context and solving problems creatively and efficiently.
- Able to work and communicate effectively with both Thai and international people with respect and courtesy.
- Able to use computer and other technologies in communicating and presenting information.



COURSES

A.General Education Courses **40 Credits**
Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3

Humanities Courses ***6 Credits***

GE 1101	Thai Civilization	3
GE 2101	World Civilization	3

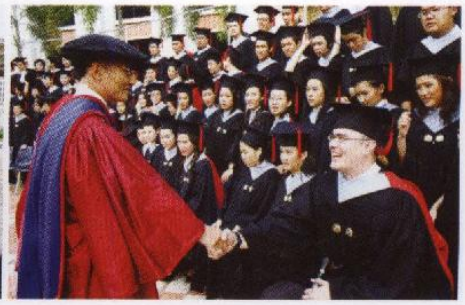
Science and MathematicsCourses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses: **96 Credits**
Core Courses ***33 Credits***

ACT 1601	Fundamentals of Financial Accounting	3
BG 1301	Fundamentals of Statistics	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2103	Art of Reasoning	3
GL 1101	Elements of Spoken Language	3
GL 3102	Introduction to Linguistics	3
GL 3103	Language, Culture and Behavior	3
MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3





Major Required Courses ***36 Credits***

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 2502	French III	3
FR 3503	Introduction to Business French	3
FR 3510	Business Communication in French I	3
FR 3530	Oral Comprehension and Expression	3
FR 3534	French Phonetics	3
FR 3570	Translation: French-Thai	3
or FR 3531	French Conversation and Discussion I *(For international students)*	3
FR 4504	Business French I	3
FR 4542	Reading French Magazines and Newspapers	3
FR 4573	Aspects of French-Speaking Countries	3

Major Elective Courses ***9 Credits***

FR 3511	Business Communication in French II	3
FR 3520	Introduction to French Linguistics	3
FR 3531	French Conversation and Discussion I	3
FR 3535	Basic Conversation in Business French I	3
FR 3536	Basic Writing in Business French I	3
FR 3541	French Reading and Oral Report	3
FR 3580	French for Secretaries	3
FR 3581	French for Tourism	3
FR 3582	French for Hotels	3
FR 4505	Business French II	3
FR 4532	French Conversation and Discussion II	3
FR 4533	Public Speaking in French	3
FR 4540	Reading in Business French	3
FR 4572	Translation in Business French	3
FR 4590	Seminar	3
FR 4591	Selected Topics in French Studies	3

Minor Courses ***18 Credits***

Business Chinese

Minor Required Courses ***12 Credits***

CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 2401	Chinese II	3
CN 2402	Chinese III	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business Chinese upon completion of the prerequisites (if any).

Business English

Minor Required Courses ***12 Credits***

EN 2230	Listening and Speaking	3
EN 3210	Business Communication in English I	3
EN 4232	Business Conversation	3
EN 4233	Public Speaking in English	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business English upon completion of the prerequisites (if any).

Business Japanese

Minor Required Courses ***12 Credits***

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business Japanese upon completion of the prerequisites (if any).

Business Information Systems

Minor Required Courses ***18 Credits***

BIS 3315	Programming and Algorithms	3
BIS 3349	Fundamentals of Computer Graphics	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3





Finance and Banking

Minor Required Courses ***18 Credits***

FIN 3701	Corporate Finance	3
FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3714	Business Condition Analysis	3
FIN 4812	International Finance	3
FIN 4813	Financial Management	3

Hospitality and Tourism Management

Minor Required Courses ***18 Credits***

HTM 3001	Sustainable Tourism	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3205	Marketing in Hospitality and Tourism	3
HTM 3211	Food and Beverage Management	3

International Business Management

Minor Required Courses ***18 Credits***

IBM 2702	International Business Environment	3
IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial Management

Minor Required Courses ***18 Credits***

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3
MGT 3905	Operations Management	3

Management

Minor Required Courses ***18 Credits***

MGT 3901	Organization Theory	3
MGT 3903	Leadership	3
MGT 3917	Innovation and Change Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3

Marketing

Minor Required Courses ***18 Credits***

MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3837	Service and Customer Relationship Management	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

C. Free Elective Courses 6 Credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
FR 1500	Introduction to French	3
GE 1101	Thai Civilization	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***19***

Second Semester

Code	Subjects	Credits
ACT 1601	Fundamentals of Financial Accounting	3
BG 1002	English II	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
FR 1501	French I	3
GL 1101	Elements of Spoken Language	3
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR

First Semester

Code	Subjects	Credits
BG 2000	English III	3
BG 2400	Macroeconomics	3
FR 2501	French II	3
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
BIS 2180	Information Technology	3
FIN 2700	Money, Banking and Financial Markets	3
FR 2502	French III	3
GE 2103	Art of Reasoning	3
MGT 2900	Principles of Management	3
	Total	***18***





THIRD YEAR
First Semester

Code	Subjects	Credits
BG 1301	Fundamentals of Statistics	3
FR 3503	Introduction to Business French	3
FR 3510	Business Communication in French I	3
FR 3530	Oral Comprehension and Expression	3
GL 3102	Introduction to Linguistics	3
	One Minor Course	3
	Total	***18***

Second Semester

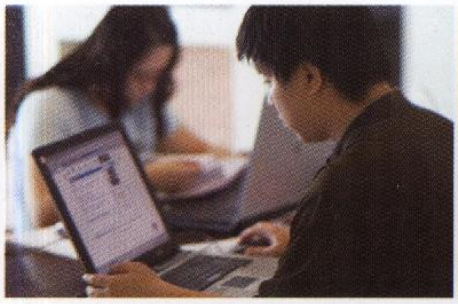
Code	Subjects	Credits
FR 3534	French Phonetics	3
FR 3570	Translation : French-Thai	3
or FR 3531	French Conversation and Discussion I (For international students)	3
GL 3103	Language, Culture and Behavior	3
	One Major Elective Course	3
	One Minor Course	3
	One Free Elective Course	3
	Total	***18***

FOURTH YEAR
First Semester

Code	Subjects	Credits
GE 2101	World Civilization	3
FR 4542	Reading French Magazines and Newspapers	3
FR 4573	Aspects of French-Speaking Countries	3
	One Major Elective Course	3
	One Minor Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
FR 4504	Business French I	3
	One Major Elective Course	3
	Three Minor Courses	9
	Total	***15***



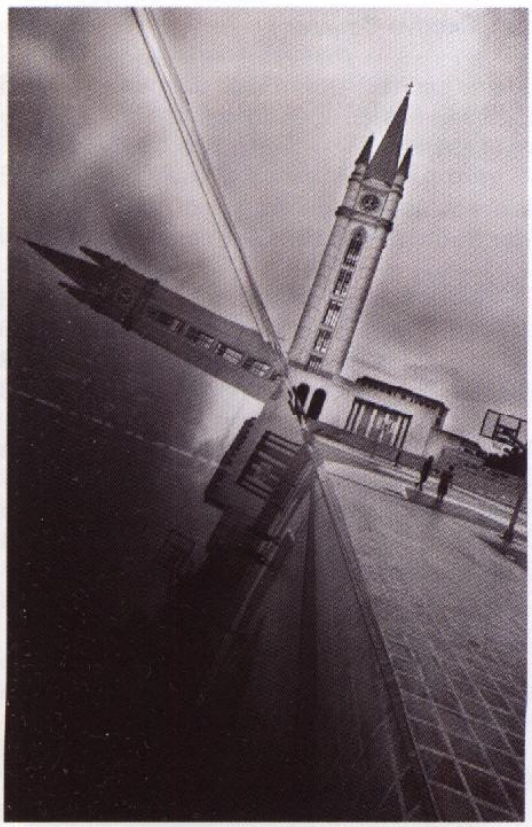


DEPARTMENT OF BUSINESS CHINESE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have personal integrity, open mind and sense of self and social responsibility.
- Have Chinese and English proficiency for business purposes.
- Have analytical and critical skills and able to apply knowledge to real practice.
- Able to work and communicate with both Thai and international people with respect and courtesy
- Have computer and information technology skills.



COURSES

A. General Education Courses **37 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3

Humanities Courses ***3 Credits***

GE 1101	Thai Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses **99 Credits**

Core Course ***21 Credits***

ACT 1601	Fundamentals of Financial Accounting	3
BG1301	Fundamentals of Statistics	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
GL 1101	Elements of Spoken Language	3
MGT 1101	Introduction to Business	3
MGT2900	Principles of Management	3
MKT2280	Principles of Marketing	3





Major Required Courses ***45 Credits***

CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 1430	Listening and Speaking in Chinese I	1
CN 1431	Listening and Speaking in Chinese II	1
CN 2401	Chinese II	3
CN 2402	Chinese III	3
CN 2431	Chinese Oral Comprehension and Expression I	2
CN 2432	Chinese Oral Comprehension and Expression II	2
CN 3403	Chinese IV	3
CN 3410	Business Communication in Chinese	3
CN 3430	Chinese Conversation and Discussion I	3
CN 3432	Chinese Conversation and Discussion II	3
CN 3450	Introduction to Chinese Writing	3
CN 3462	Introduction to Chinese Culture	3
CN 3470	Translation I: Chinese-Thai	3
or CN 3441	Chinese Reading and Oral Report *(only for international students)*	3
CN 4442	Reading in Chinese Newspapers	3
CN 4471	Translation II: Thai-Chinese	3
or CN 4440	Reading in Business Chinese *(only for international students)*	3

Major Elective Courses ***15 Credits***

CN 3433	Chinese from Audio-Visual Media	3
CN 3441	Chinese Reading and Oral Report	3
CN 3480	Chinese for Secretaries	3
CN 3481	Chinese for Tourism	3
CN 3482	Chinese for Hotels	3
CN 3483	Chinese for Service Industries	3
CN 4433	Public Speaking in Chinese	3
CN 4434	Advanced Listening and Speaking in Chinese I	3
CN 4435	Advanced Listening and Speaking in Chinese II	3
CN 4440	Reading in Business Chinese	3
CN 4460	Survey of Chinese Literature	3
CN 4491	Seminar on Selected Topics	3

Minor Courses ***18 Credits***

Business English

Minor Required Courses ***12 Credits***

EN 2230	Listening and Speaking	3
EN 3210	Business Communication in English I	3
EN 4232	Business Conversation	3
EN 4233	Public Speaking in English	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business English upon completion of the prerequisites (if any).

Business French

Minor Required Courses ***12 Credits***

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 2502	French III	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business French upon completion of the prerequisites (if any).

Business Japanese

Minor Required Courses ***12 Credits***

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3

Minor Elective Courses ***6 Credits***

Students can take any course from the Department of Business Japanese upon completion of the prerequisites (if any).





Business Information Systems

Minor Required Courses ***18 Credits***

BIS 3315	Programming and Algorithms	3
BIS 3349	Fundamentals of Computer Graphics	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

Minor Required Courses ***18 Credits***

FIN 3701	Corporate Finance	3
FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3714	Business Condition Analysis	3
FIN 4812	International Finance	3
FIN 4813	Financial Management	3

Hospitality and Tourism Management

Minor Required Courses ***18 Credits***

HTM 3001	Sustainable Tourism	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3205	Marketing in Hospitality and Tourism	3
HTM 3211	Food and Beverage Management	3

International Business Management

Minor Required Courses ***18 Credits***

IBM 2702	International Business Environment	3
IBM 3711	Comparative Management	3
IBM3713	International Management	3
IBM3714	Export-Import Policy and Strategy	3
IBM4811	International Strategic Management	3
MKT3620	Global Marketing	3

Industrial Management

Minor Required Courses ***18 Credits***

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3
MGT3905	Operations Management	3

Management

Minor Required Courses ***18 Credits***

MGT 3901	Organization Theory	3
MGT 3903	Leadership	3
MGT 3917	Innovation and Change Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3

Marketing

Minor Required Courses ***18 Credits***

MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3837	Service and Customer Relationship Management	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Real Estate Management

Minor Required Courses ***18 Credits***

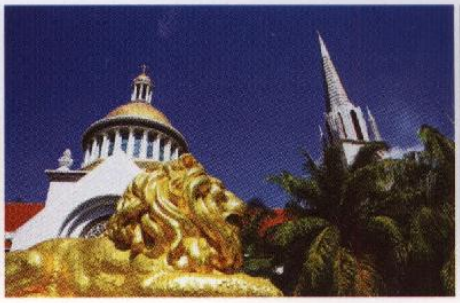
REM 3111	Principles of Real Estate	3
REM 3112	Real Estate Law	3
REM 3113	Real Estate Economics	3
REM 3114	Building Design and Construction Techiques	3
REM 3211	Principles of Real Estate Development	3
REM 4113	Principles of Property Management	3

C. Free Elective Courses — 6 Credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

Free elective courses of the Department which are offered to non Business Chinese Major:

CN 0400	Chinese for Beginners I	3
CN 0401	Chinese for Beginners II	3


STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
CN 1400	Introduction to Chinese	3
CN 1430	Listening and Speaking in Chinese I	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
CN 1401	Chinese I	3
CN 1431	Listening and Speaking in Chinese II	1
GL 1101	Elements of Spoken Language	3
MGT 1101	Introduction to Business	3
	Total	***19***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2400	Macroeconomics	3
CN 2401	Chinese II	3
CN 2431	Chinese Oral Comprehension and Expression I	2
MGT 2404	Managerial Psychology	3
MKT 2280	Principles of Marketing	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
ACT 1601	Fundamentals of Financial Accounting	3
BG 2001	English IV	3
BIS 2180	Information Technology	3
CN 2402	Chinese III	3
CN 2432	Chinese Oral Comprehension and Expression II	2
MGT 2900	Principles of Management	3
	Total	***17***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
CN 3403	Chinese IV	3
CN 3430	Chinese Conversation and Discussion I	3
CN 3450	Introduction to Chinese Writing	3
CN 3470	Translation I: Chinese-Thai	3
or CN 3441	Chinese Reading and Oral Report *(only for international students)*	3
	One Major Elective Course	3
	One Minor Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CN 3410	Business Communication in Chinese	3
CN 3432	Chinese Conversation and Discussion II	3
CN 3462	Introduction to Chinese Culture	3
	Two Major Elective Courses	6
	One Minor Course	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
CN 4471	Translation II: Thai-Chinese	3
or CN 4440	Reading in Business Chinese *(only for international students)*	3
	Two Major Elective Courses	6
	One Minor Course	3
	Two Free Elective Courses	6
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CN 4442	Reading in Chinese Newspapers	3
GE 1101	Thai Civilization	3
GE 2202	Ethics	3
	Three Minor Courses	9
	Total	***18***





DEPARTMENT OF BUSINESS JAPANESE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have a sense of social and self responsibility and become an ethical citizen of the society.
- Have up-to-date and business language skills both in Japanese and in English for listening, speaking, reading and writing through technologies.
- Demonstrate skills and expertise in applying knowledge to real life context and solving problems creatively and efficiently.
- Able to work and communicate effectively with both Thai and international people with respect and courtesy.
- Able to use information technology and other technologies in communicating and presenting information.

COURSES

A. General Education Courses **40 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3

Social Science Courses ***13 Credits***

BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3

Humanities Courses ***6 Credits***

GE 1101	Thai Civilization	3
GE 2101	World Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses: **96 Credits**

Core Courses ***30 Credits***

BG 1301	Fundamentals of Statistics	3
BIS 1141	Business Software Applications	0
BIS 2180	Information Technology	3
FIN 2700	Money, Banking and Financial Markets	3
GE 2103	Art of Reasoning	3
GL 1101	Elements of Spoken Language	3
GL 3102	Introduction to Linguistics	3
GL 3103	Language, Culture and Behavior	3
MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***39 Credits***

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3
JA 2703	Business Reading and Writing I	3
JA 2704	Business Reading and Writing II	3
JA 3701	Intermediate Japanese Grammar	3
JA 3702	Business Japanese I	3
JA 3704	Oral Comprehension and Expression	3
JA 4701	Reading in Business Japanese I	3
JA 4702	Business Writing in Japanese I	3
JA 4703	Translation I (Japanese-Thai)	3
or JA 4721	Japanese Conversation and Discussion *(For international students)*	3
JA 4704	Translation II (Thai-Japanese)	3
or JA 4725	Translation in Business Japanese *(For international students)*	3

Major Elective Courses ***9 Credits***

JA 3721	Introduction to Japanese Linguistics	3
JA 3722	Japanese Reading and Oral Report	3
JA 3723	Introduction to Japanese Phonetics	3
JA 3724	Aspects of Japan	3
JA 3725	Japanese for Secretaries	3
JA 3726	Japanese for Tourism	3
JA 3727	Japanese for Hotels	3





JA 3728	Japanese for Airline Services	3
JA 3729	Survey of Japanese Literature	3
JA 4721	Japanese Conversation and Discussion	3
JA 4722	Reading in Business Japanese II	3
JA 4723	Business Writing in Japanese II	3
JA 4724	Business Japanese II	3
JA 4725	Translation in Business Japanese	3
JA 4726	Public Speaking in Japanese	3
JA 4727	Seminar	3

Minor Courses ***18 Credits***

Business Chinese

Minor Required Courses ***12 Credits***

CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 2401	Chinese II	3
CN 2402	Chinese III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business Chinese upon completion of the prerequisites (if any).

Business English

Minor Required Courses ***12 Credits***

EN 2230	Listening and Speaking	3
EN 3210	Business Communication in English I	3
EN 4232	Business Conversation	3
EN 4233	Public Speaking in English	3

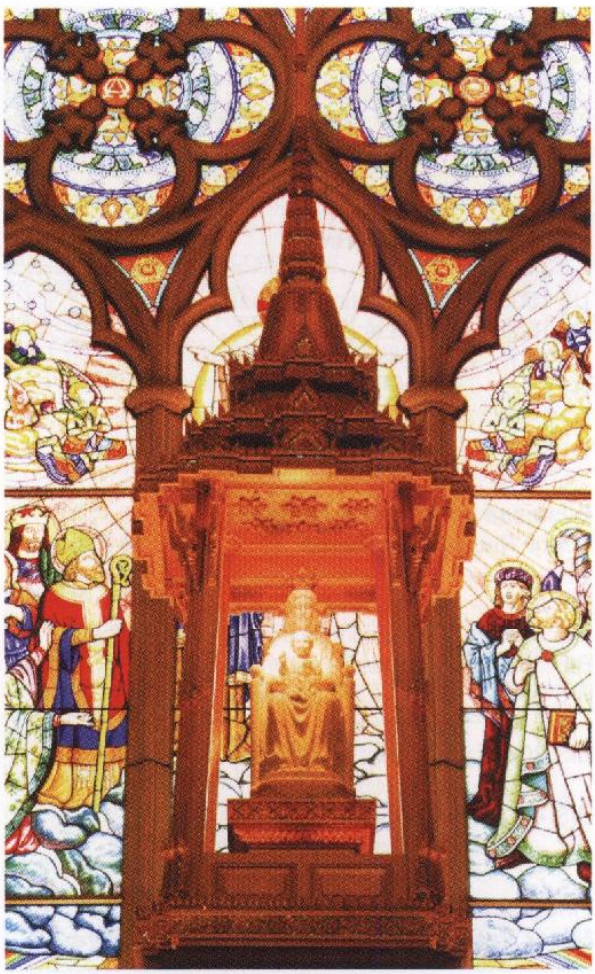
Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business English upon completion of the prerequisites (if any).

Business French

Minor Required Courses ***12 Credits***

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 2502	French III	3







Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business French upon completion of the prerequisites (if any).

Thai

Minor Required Courses ***18 Credits***

TH 1500	Introduction to Thai	3
TH 1501	Thai Language I	3
TH 2501	Thai Lang	3
TH 2502	Thai Language III	3
TH 3501	Advanced Reading	3
TH 3502	Thai Writing Development	3

Business Information Systems

Minor Required Courses ***18 Credits***

BIS 3315	Programming and Algorithms	3
BIS 3349	Fundamentals of Computer Graphics	3
BIS 3635	Database Systems	3
BIS 3655	Data Communications and Networking	3
BIS 3666	Information Systems Analysis and Design	3
BIS 4675	Information Systems Project Management	3

Finance and Banking

Minor Required Courses ***18 Credits***

FIN 3701	Corporate Finance	3
FIN 3711	Investment	3
FIN 3712	Money and Capital Markets	3
FIN 3714	Business Condition Analysis	3
FIN 4812	International Finance	3
FIN 4813	Financial Management	3

Hospitality and Tourism Management

Minor Required Courses ***18 Credits***

HTM 3001	Sustainable Tourism	3
HTM 3101	Introduction to Hospitality Management	3
HTM 3102	Introduction to Tourism Industry Management	3
HTM 3103	Consumer Behavior in Hospitality and Tourism Industry	3
HTM 3205	Marketing in Hospitality and Tourism	3
HTM 3211	Food and Beverage Management	3

International Business Management

Minor Required Courses ***18 Credits***

IBM 2702	International Business Environment	3
IBM 3711	Comparative Management	3
IBM 3713	International Management	3
IBM 3714	Export-Import Policy and Strategy	3
IBM 4811	International Strategic Management	3
MKT 3620	Global Marketing	3

Industrial Management

Minor Required Courses ***18 Credits***

IDM 3203	Logistics and Supply Chain Management	3
IDM 3204	Industrial Safety and Risk Management	3
IDM 4201	Manufacturing Planning and Control	3
IDM 4203	Quality Management	3
IDM 4206	Industrial Environmental Management	3
MGT 3905	Operations Management	3

Management

Minor Required Courses ***18 Credits***

MGT 3901	Organization Theory	3
MGT 3903	Leadership	3
MGT 3917	Innovation and Change Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3

Marketing

Minor Required Courses ***18 Credits***

MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3837	Service and Customer Relationship	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

C. Free Elective Courses — 6 Credits

Students can take free elective courses of 6 Credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

FIRST YEAR
First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
GE 1101	Thai Civilization	3
GE 1201	Information Literacy Skills	1
or GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
JA 1700	Introduction to Japanese	3
	Total	***19***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
BG 2401	Microeconomics	3
BIS 1141	Business Software Applications	0
GL 1101	Elements of Spoken Language	3
JA 1701	Japanese I	3
MGT 1101	Introduction to Business	3
	Total	***18***

SECOND YEAR
First Semester

Code	Subjects	Credits
BG 2000	English III	3
BG 2400	Macroeconomics	3
JA 2701	Japanese II	3
JA 2703	Basic Reading and Writing I	3
MGT 2404	Managerial Psychology	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
BIS 2180	Information Technology	3
FIN 2700	Money, Banking and Financial Markets	3
JA 2702	Japanese III	3
JA 2704	Basic Reading and Writing II	3
MGT 2900	Principles of Management	3
	Total	***18***





THIRD YEAR

First Semester

Code	Subjects	Credits
GL 3102	Introduction to Linguistics	3
JA 3701	Intermediate Japanese Grammar	3
JA 3702	Business Japanese I	3
JA 3704	Oral Comprehension and Expression	3
	One Major Elective Course	3
	One Minor Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
JA 4703	Translation I: Japanese-Thai	3
or JA 4721	Japanese Conversation and Discussion (For international students)	3
GL 3103	Language, Culture and Behavior	3
GE 2101	World Civilization	3
	One Major Elective Course	3
	One Minor Course	3
	One Free Elective Course	3
	Total	***18***

FOURTH YEAR

First Semester

Code	Subjects	Credits
JA 4701	Reading in Business Japanese I	3
JA 4702	Business Writing in Japanese I	3
JA 4704	Translation II: Thai-Japanese	3
or JA 4725	Translation in Business Japanese (For international students)	3
	Two Minor Courses	6
	One Free Elective Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
GE 2202	Ethics	3
GE 2103	Arts of Reasoning	3
	One Major Elective Course	3
	Two Minor Courses	6
	Total	***15***



CHINESE FOR ECONOMY AND TRADE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have personal integrity, open mind and sense of self and social responsibility.
- Be proficient in Chinese language for economy and trade, and understand various aspects of Chinese culture and know how to apply them appropriately.
- Have analytical and critical skills and able to apply knowledge to real practice.
- Able to work in a team with mutual respect and courtesy.
- Able to work and communicate with both Thai and Chinese people fluently and accurately.

COURSES

A. General Education Courses		**30 Credits**
LanguageCourses		***15 Credits***
BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
Social Science Courses		***9 Credits***
BG 2400	Macroeconomics	3
BG 2401	Microeconomics	3
GE 2202	Ethics	3
Humanities Courses		***3 Credits***
GE 2101	World Civilization	3
Science and Mathematics Courses		***3 Credits***
GE 1301	Environmental Science	3

B. Specialized Courses — 99 Credits

Core Courses — *63 Credits*

CET 1811	Foundation Chinese I	3
CET 1812	Foundation Chinese II	3
CET 1821	Chinese Listening and Speaking I	3
CET 1822	Chinese Listening and Speaking II	3
CET 1831	Chinese Reading and Writing I	3
CET 1832	Chinese Reading and Writing II	3
CET 1841	Chinese Grammar and Usage I	3
CET 1842	Chinese Grammar and Usage II	3
CET 2813	Intermediate Chinese I	3
CET 2814	Intermediate Chinese II	3
CET 2823	Intermediate Chinese Listening and Speaking I	3
CET 2824	Intermediate Chinese Listening and Speaking II	3
CET 2833	Intermediate Chinese Reading and Writing I	3
CET 2834	Intermediate Chinese Reading and Writing II	3
CET 2851	Chinese for Business I	3
CET 2852	Chinese for Business II	3
CET 3815	Advanced Chinese I	3
CET 3816	Advanced Chinese II	3
CET 3851	Chinese for Economy and Trade I	3
CET 3852	Chinese for Economy and Trade II	3
CET 4853	Chinese for Economy and Trade III	3

Major Required Courses — *30 Credits*

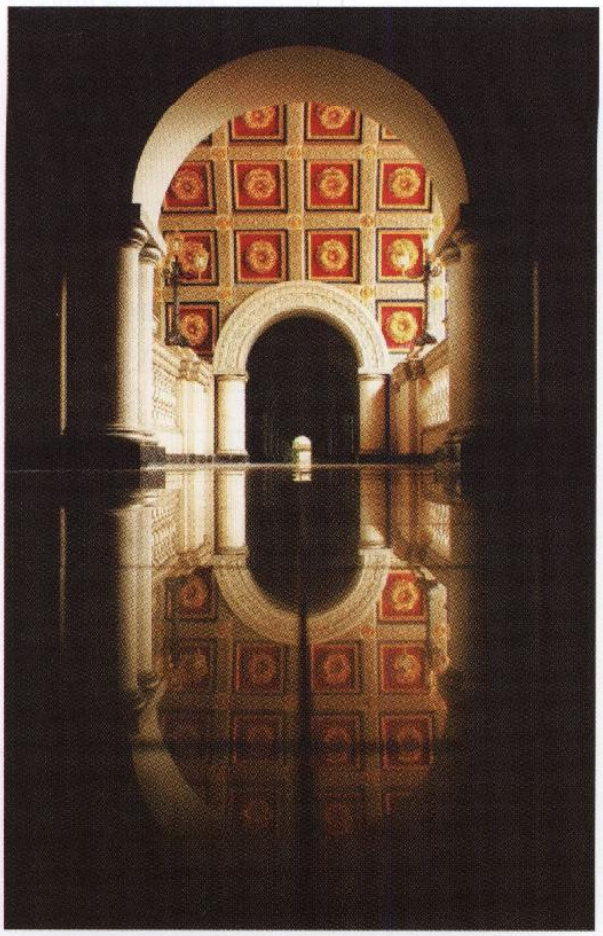
CET 3853	Business Writing in Chinese I	3
CET 3854	Business Writing in Chinese II	3
CET 3862	Chinese for Business Conversation I	3
CET 3863	Chinese for Business Conversation II	3
CET 4861	Business Negotiation in Chinese	3
CET 4871	Principles of Economics in Chinese	3
CET 4872	Contemporary Chinese Economy and Trade	3
CET 4873	Reading Comprehension on Economy and Trade	3
CET 4881	Business Research Methodology in Chinese	3
CET 4882	Business Research Writing in Chinese	3

Major Elective Courses — *6 Credits*

CET 4854	Thai-Chinese Translation in Economy and Trade	3
CET 4874	Directed Studies in Economy and Trade	3
CN 3480	Chinese for Secretaries	3
CN 3481	Chinese for Tourism	3
CN 3482	Chinese for Hotels	3
CN 4440	Reading in Business Chinese	3

C. Free Elective Courses — 6 Credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
CET 1811	Foundation Chinese I	3
CET 1821	Chinese Listening and Speaking I	3
CET 1831	Chinese Reading and Writing I	3
CET 1841	Chinese Grammar and Usage I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
CET 1812	Foundation Chinese II	3
CET 1822	Chinese Listening and Speaking II	3
CET 1832	Chinese Reading and Writing II	3
CET 1842	Chinese Grammar and Usage II	3
GE 1301	Environmental Science	3
	Total	***18***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2400	Macroeconomics	3
CET 2813	Intermediate Chinese I	3
CET 2823	Intermediate Chinese Listening and Speaking I	3
CET 2833	Intermediate Chinese Reading and Writing I	3
CET 2851	Chinese for Business I	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BG 2401	Microeconomics	3
CET 2814	Intermediate Chinese II	3
CET 2824	Intermediate Chinese Listening and Speaking II	3
CET 2834	Intermediate Chinese Reading and Writing II	3
CET 2852	Chinese for Business II	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
CET 3815	Advanced Chinese I	3
CET 3851	Chinese for Economy and Trade I	3
CET 3853	Business Writing in Chinese I	3
CET 3862	Chinese for Business Conversation I	3
GE 2202	Ethics	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CET 3816	Advanced Chinese II	3
CET 3852	Chinese for Economy and Trade II	3
CET 3854	Business Writing in Chinese II	3
CET 3863	Chinese for Business Conversation II	3
GE 2101	World Civilization	3
	One Free Elective Course	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
CET 4853	Chinese for Economy and Trade III	3
CET 4861	Business Negotiationin Chinese	3
CET 4871	Principles of Economics in Chinese	3
CET 4881	Business Research Methodology in Chinese	3
	One Major Elective Course	3
	Total	***15***

Second Semester

Course Code	Course Title	Credits
CET 4872	Contemporary Chinese Economy and Trade	3
CET 4873	Reading Comprehension on Economy and Trade	3
CET 4882	Business Research Writing in Chinese	3
	One Major Elective Course	3
	Total	***12***

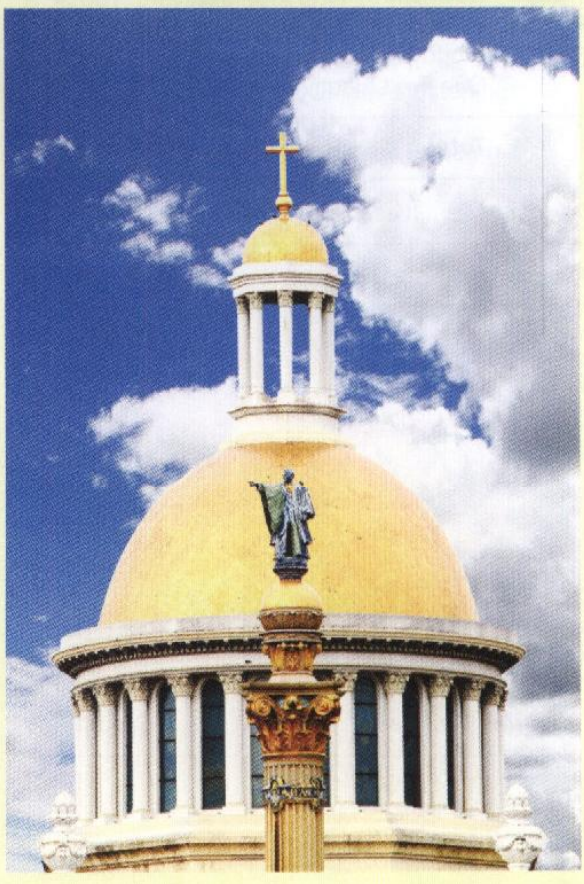
SCHOOL OF MUSIC

Curriculum Structure

Courses	*Music Business*	*Music Performance*
General Education Courses	34	34
- Language Courses	15	15
- Social Science Courses	10	10
- Humanities Courses	3	3
- Science and Mathematics Courses	6	6
Specialized Courses	103	108
- Core Courses	33	36
- Major Required Courses	37	40
- Major Elective Courses	15	14
- Minor Required Courses	12	12
- Minor Elective Courses	6	6
Free Electives Courses	6	6
Total Credits	***143***	***148***







GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Arts in Music Business / Bachelor of Music in Music Performance upon students who meet all of the following requirements:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline
- Have completed the MU 7111 I – VIII Concert Attendance (Concerts, Workshops, Graduate orientation, Guest speakers and Guest lecturers)

DEPARTMENT OF MUSIC BUSINESS

OBJECTIVES

1. Understand the code of ethics in the music industry.
2. Have awareness of the impact of music on society and community well-being.
3. Have knowledge in business and skills in performance, composition, arrangement and music technology wit individual creativity essential for musician careers as performers, writers, teachers, producers, and entrepreneurs.
4. Have social understanding and appreciation of the value of musical service to community and culture, as well as the necessity of continuous improvement in their careers.
5. Integrate their professional growth and intellectual development with their interpersonal skills.
6. Able to interact with people in the music business and with the audience during music performance.
7. Able to use information technology and other technologies in communicating and presenting information.

COURSES

A. General Education Courses 34 Credits

Language Courses *15 Credits*

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3

Social Science Courses *10 Credits*

BG 2403	Introduction to Economics	3
GE 1201	Information Literacy Skills	1
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3

Humanities Courses *3 Credits*

GE 2101	World Civilization	3

Science and Mathematics Courses *6 Credits*

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses 103 Credits

Core Courses *33 Credits*

EN 3289	English for Music Business	3
MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3
MU 0020	Fundamentals of Music Theory	Non-credit
MU 2211	History of Thai Music	3
MU 3221	History of Western Music I	2
MU 3222	History of Western Music II	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance I-VIII	Non-credit

Major Required Courses *37 Credits*

MB 2421	Music Production Technology	3
MB 2521	Music Business I	3
MB 2522	Music Business II	3
MB 3421	Music Business Technology	3
MB 3512	Law on Music Business	3
MB 3513	Local Internship in Music Industry (240 hours)	3
MB 4511	Music Business Artist/Project Management	3
MB 4521	Selected Topics in Music Industry I	1
MB 4522	Selected Topics in Music Industry II	2
MB 4523	Music Business Seminar	2
MU 0111	Ear Training I	1
MU 0112	Ear Training II	1
MU 1111	Theory of Western Music I	3
MU 1112	Theory of Western Music II	3
MU 2113	Theory of Western Music III	3





Major Elective Courses ***15 Credits***

MA 0610	Music Ensemble	2
MA 2501	Chorus I	1
MA 2502	Chorus II	1
MA 2503	Chorus III	1
MA 2504	Chorus IV	1
MA 4311	Advanced Performance I	2
MA 4312	Advanced Performance II	2
MB 3423	Sound Design and Sound Logo	3
MB 4512	Music in Film Industry	3
MB 4514	Career Options in Music Business	3
MGT 3922	Introduction to New Venture	3
MGT 3924	Human Resources Development	3
MKT 3627	Sales Promotion	3
MKT 3628	Public Relations	3
MKT 3629	Pricing Strategy and Decision	3
MKT 3823	Marketing Channel Strategy and Decisions	3
MKT 4725	Competitive Analysis and Strategy	3
MKT 4726	Advertising and Creative Strategies	3
MKT 4806	Product and Brand Management	3
MU 2221	Popular Music Literature	3
MU 3121	Composition	3
MU 4103	Form and Analysis	3
MU 4112	Arranging	3
MU 4223	Music in Human Life	3

Minor Courses ***18 Credits***

Marketing

Minor Required Courses ***18 Credits***

MKT 3102	Integrated Marketing Communications	3
MKT 3525	Sales Management	3
MKT 3530	Consumer Behavior	3
MKT 3837	Service and Customer Relationship Management	3
MKT 4730	Marketing Management	3
MKT 4809	Marketing for Services	3

Management

Minor Required Courses ***18 Credits***

MGT 3901	Organization Theory	3
MGT 3903	Leadership	3
MGT 3917	Innovation and Change Management	3
MGT 3923	Strategic Human Resources Management	3
MGT 3942	Organizational Behavior	3
MGT 4916	Negotiation Strategy	3

Business English

Minor Required Courses ***12 Credits***

EN 2230	Listening and Speaking	3
EN 3210	Business Communication in English I	3
EN 4232	Business Conversation	3
EN 4233	Public Speaking in English	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business English upon completion of the prerequisites (if any).

Business French

Minor Required Courses ***12 Credits***

FR 1500	Introduction to French	3
FR 1501	French I	3
FR 2501	French II	3
FR 2502	French III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business French upon completion of the prerequisites (if any).

Business Chinese

Minor Required Courses ***12 Credits***

CN 1400	Introduction to Chinese	3
CN 1401	Chinese I	3
CN 2401	Chinese II	3
CN 2402	Chinese III	3

Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business Chinese upon completion of the prerequisites (if any).

Business Japanese

Minor Required Courses ***12 Credits***

JA 1700	Introduction to Japanese	3
JA 1701	Japanese I	3
JA 2701	Japanese II	3
JA 2702	Japanese III	3





Minor Elective Courses ***6 Credits***

Students can take any courses from the Department of Business Japanese upon completion of the prerequisites (if any).

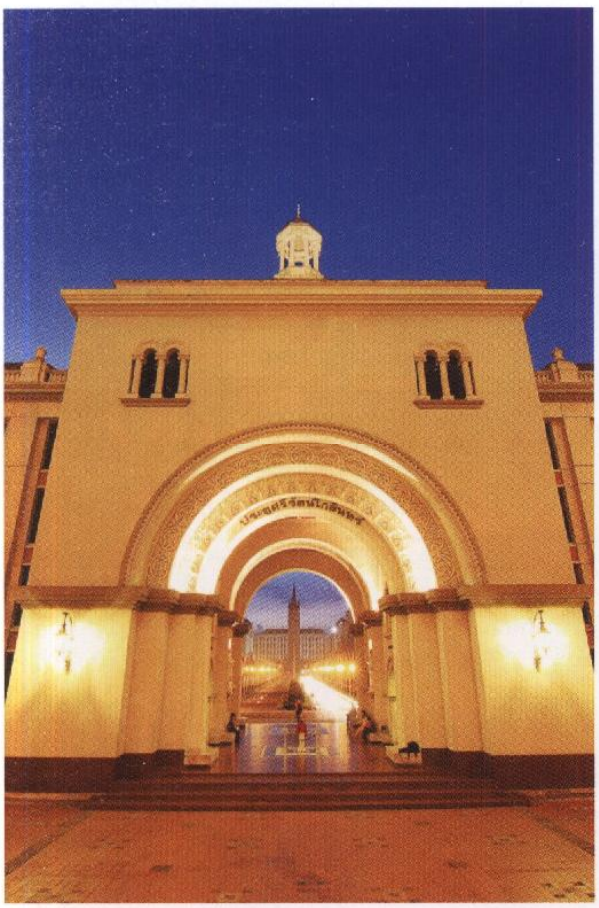
C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

D. Free Elective Courses open to non-music students

Free elective courses which are offered by the Department of Music Business of School of Music:

MA 1300	Introduction to Applied Music	1
MU 1001	Music Appreciation	3



STUDY PLAN

FIRST YEAR

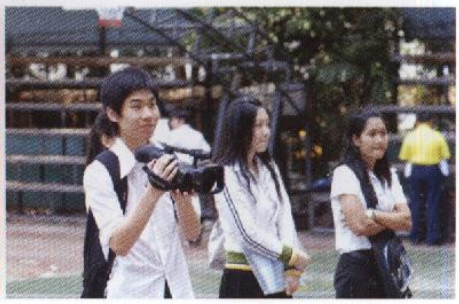
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
GE 1201	Information Literacy Skills	1
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
GS 2101	World Civilization	3
MA 1301	Applied Music I	2
MU 0111	Ear Training I	1
MU 1111	Theory of Western Music I	3
MU 7111	Concert Attendance I	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
GE 1301	Environment Science	3
MA1302	Applied Music II	2
MGT 1101	Introduction to Business	3
MU 0112	Ear Training II	1
MU 1112	Theory of Western Music II	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance II	Non-credit
	Total	***18***





SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2403	Introduction to Economics	3
MA 2301	Applied Music III	2
MB 2521	Music Business I	3
MGT 2900	Principles of Management	3
MU 2113	Theory of Western Music III	3
MU 7111	Concert Attendance III	Non-credit
MU 3221	History of Western Music I	2
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
MA 2302	Applied Music IV	2
MB 2421	Music Production Technology	3
MB 2522	Music Business II	3
MGT 2404	Managerial Psychology	3
MKT 2280	Principles of Marketing	3
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***

THIRD YEAR

First Semester

Course Code	Course Title	Credits
EN 3286	English for Music Business	3
MA 3301	Applied Music V	2
MB 3421	Music Business Technology	3
MB 3512	Law on Music Business	3
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance V	Non-credit
	One Major Elective Course	3
	One Minor Course	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MA 3302	Applied Music VI	2
MB 4511	Music Business Artist/Project Management	3
MU 7111	Concert Attendance VI	Non-credit
	One Major Elective Course	3
	One Minor Course	3
	Total	***14***

Summer Session

Course Code	Course Title	Credits
MB 3513	Local Internship in Music Industry (240 hours)	3
	Total	***3***





FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MB 4521	Selected Topics in Music Industry I	1
MU 7111	Concert Attendance VII	Non-credit
	Two Major Elective Courses	6
	Two Minor Courses	6
	One Free Elective Course	3
	Total	***16***

Second Semester

Course Code	Course Title	Credits
MB 4522	Selected Topics in Music Industry II	2
MB 4523	Music Business Seminar	2
MU 7111	Concert Attendance VIII	Non-credit
	One Major Elective Course	3
	Two Minor Courses	6
	One Free Elective Course	3
	Total	***16***








DEPARTMENT OF MUSIC PERFORMANCE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Understand the code of ethics in the music industry.
- Have awareness of the impact of music on society and community well-being.
- Have knowledge and skills in performance, composition, arrangement and music technology with individual creativity essential for musician careers as performers, writers, teachers, producers, and entrepreneurs.
- Have social understanding and appreciation of the value of musical service to community and culture, as well as the necessity of continuous improvement in their careers.
- Integrate their professional growth and intellectual development with their interpersonal skills.
- Able to interact with people in the music business and with the audience during music performance.
- Able to use information technology and other technologies in communicating and presenting information.

COURSES

A. General Education Courses **34 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3

Social Science Courses ***10 Credits***

GE 1201	Information Literacy Skills	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3
MGT 2404	Managerial Psychology	3

Humanities Courses ***3 Credits***

GE 2101	World Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses **108 Credits**

Core Courses ***36 Credits***

MA 2501	Chorus I	1
MA 2502	Chorus II	1
MA 2503	Chorus III	1
MA 2504	Chorus IV	1
MU 0020	Fundamentals of Music Theory	Non-credit
MU 0101	Ear Training I	2
MU 0102	Ear Training II	2
MU 0103	Ear Training III	2
MU 0104	Ear Training IV	2
MU 1111	Theory of Western Music I	3
MU 1112	Theory of Western Music II	3
MU 2113	Theory of Western Music III	3
MU 2114	Theory of Western Music IV	3
MU 2211	History of Thai Music	3
MU 3221	History of Western Music I	2
MU 3222	History of Western Music II	2
MU 4221	History of Western Music III	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance I-VIII	Non-Credit

Major Required Courses ***40 Credits***

Jazz Major

CEL 1101	Sight Reading Lab I	1
CEL 1102	Sight Reading Lab II	1
CIS 1401	Keyboard harmony I	2
CIS 1402	Keyboard harmony II	2
CIS 1501	Instrumental Instruction I	2
CIS 1502	Instrumental Instruction II	2
CIS 2503	Instrumental Instruction III	2
CIS 2504	Instrumental Instruction IV	2
CIS 3505	Instrumental Instruction V	2
CIS 3506	Instrumental Instruction VI	2
CIS 4507	Instrumental Instruction VII	2
CIS 4508	Instrumental Instruction VIII	2
CMP 1201	Contemporary Arranging I	3
CMP 1202	Contemporary Arranging II	3
CPS 1101	Jazz Improvisation I	2
CPS 1102	Jazz Improvisation II	2
CPS 2101	Jazz Improvisation III	2





CPS 3401	Performance Ear Training I	2
CPS 3402	Performance Ear Training II	2
CPS 4401	Jazz Recital	2

Songwriting Major

CEL 1101	Sight Reading Lab I	1
CEL 1102	Sight Reading Lab II	1
CIS 1401	Keyboard harmony I	2
CIS 1402	Keyboard harmony II	2
CIS 1501	Instrumental Instruction I	2
CIS 1502	Instrumental Instruction II	2
CIS 2503	Instrumental Instruction III	2
CIS 2504	Instrumental Instruction IV	2
CMP 1201	Contemporary Arranging I	3
CMP 1202	Contemporary Arranging II	3
CMP 2601	Practicum in Music Technology	3
CMP 3105	Traditional Harmony I	2
CMP 3106	Traditional Harmony II	2
CMP 3204	Arranging for Song Writing	2
CMP 3601	Songwriting	2
CMP 3602	Advanced Song Writing	2
CMP 3611	Vocal and Lyric Writing	2
CMP 4110	Jazz Composition	2
MU 1401	Computer for Musicians	3

Piano Major

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MC 2301	Accompaniment I	2
MC 2302	Accompaniment II	2
MC 3201	Keyboard Literature I	3
MC 3202	Keyboard Literature II	3
MC 3301	Junior Recital	2
MC 4301	Senior Recital	4
MC 4710	Piano Pedagogy	2
MU 2501	Ensemble I	2
MU 2502	Ensemble II	2
MU 3501	Ensemble III	2

Harpsichord Major

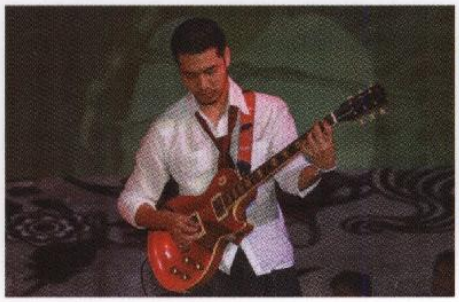
MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MC 3201	Keyboard Literature I	3
MC 3202	Keyboard Literature II	3
MC 3301	Junior Recital	2
MC 3511	Introduction to Basso Continuo	2
MC 3512	Advanced Basso Continuo	2
MC 4301	Senior Recital	4
MC 4711	Harpsichord Pedagogy	2
MU 2501	Ensemble I	2
MU 2502	Ensemble II	2
MU 3501	Ensemble III	2

Guitar Major

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MA 3501	Flamenco Techniques	2
MC 3221	Guitar Literature I	3
MC 3222	Guitar Literature II	3
MC 3301	Junior Recital	2
MC 4212	Lute Tablature	2
MC 4301	Senior Recital	4
MC 4712	Guitar Pedagogy	2
MU 2501	Ensemble I	2
MU 2502	Ensemble II	2
MU 3501	Ensemble III	2

Lute Major

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MC 3231	Lute Literature I	3
MC 3232	Lute Literature II	3
MC 3301	Junior Recital	2
MC 3511	Introduction to Basso Continuo	2
MC 4212	Lute Tablature	2
MC 4301	Senior Recital	4
MC 4713	Lute Pedagogy	2





MU 2501	Ensemble I	2
MU 2502	Ensemble II	2
MU 3501	Ensemble III	2

Vocal Major

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 1401	Piano Harmony I	2
MA 1402	Piano Harmony II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MC 2242	Opera Staging	2
MC 2511	Vocal Diction I	1
MC 2512	Vocal Diction II	1
MC 3241	Vocal Literature	3
MC 3242	Opera Literature	3
MC 3301	Junior Recital	2
MC 3513	Vocal Diction III	1
MC 3514	Vocal Diction IV	1
MC 4301	Senior Recital	4
MC 4714	Vocal Pedagogy	2

String, Percussion, Woodwind and Brass Major

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 1401	Piano Harmony I	2
MA 1402	Piano Harmony II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3301	Applied Music V	2
MA 3302	Applied Music VI	2
MA 4301	Applied Music VII	2
MA 4302	Applied Music VIII	2
MC 3301	Junior Recital	2
MC 4301	Senior Recital	4
MC 4715	String Pedagogy *(for String only)*	2
or MC 4716	Percussion Pedagogy *(for Percussion only)*	2
or MC 4717	Woodwind Pedagogy *(for Woodwind only)*	2
or MC 4718	Brass Pedagogy *(for Brass only)*	2
MU 2501	Ensemble I *	2
MU 2502	Ensemble II *	2
MU 3501	Ensemble III *	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Composition Major

CMP 4117	Counterpoint I	2
CMP 4118	Counterpoint II	2
MA 1101	Applied Composition I	2
MA 1102	Applied Composition II	2
MA 1401	Piano Harmony I	2
MA 2101	Applied Composition III	2
MA 2102	Applied Composition IV	2
MA 3101	Applied Composition V	2
MA 3102	Applied Composition VI	2
MA 4101	Applied Composition VII	2
MA 4102	Applied Composition VIII	2
MC 4302	Recital for Composition	4
MU 1401	Computer for Musicians	3
MU 2101	Orchestration	3
MU 2102	Conducting	2
MU 3110	Techniques of Modern Composition	3
MU 4103	Form and Analysis	3

Major Elective Courses — *14 Credits*

CEL 1510	Pop / Rock Ensemble I	1
CEL 1511	Jazz Ensemble I	1
CEL 1512	Vocal Ensemble I	1
CEL 1513	Funk / Fusion Ensemble I	1
CEL 1514	Blues / R&B Ensemble I	1
CEL 1515	Latin Ensemble I	1
CEL 2510	Pop / Rock Ensemble II	1
CEL 2511	Jazz Ensemble II	1
CEL 2512	Vocal Ensemble II	1
CEL 2513	Funk / Fusion Ensemble II	1
CEL 2514	Blues / R&B Ensemble II	1
CEL 2515	Latin Ensemble II	1
CMP 2601	Practicum in Music Technology	3
CMP 2602	Song Demo Production	3
CMP 3105	Traditional Harmony I	2
CMP 3106	Traditional Harmony II	2
CMP 3303	Chord Scale Voicing for Arranging	2
CMP 3603	Music Production for all Media	3
CMP 3604	Jingle Writing	2
CMP 3611	Vocal and Lyric Writing	2
CMP 4109	Reharmonization Techniques	2
CMP 4117	Counterpoint I	2
CMP 4118	Counterpoint II	2
CPS 3401	Performance Ear Training I	2
CPS 3402	Performance Ear Training II	2
MA 1401	Piano Harmony I	2
MA 1402	Piano Harmony II	2
MA 3801	Contemporary Music Ensemble	1
MA 3901	Baroque Music Ensemble	1
MB 2521	Music Business I	3
MC 2211	History of Music Notation	2





MC 2301	Accompaniment I	2
MC 2302	Accompaniment II	2
MC 3511	Introduction to Basso Continuo	2
MC 3512	Advanced Basso Continuo	2
MC 4212	Lute Tablature	2
MU 1401	Computer for Musicians	3
MU 2102	Conducting	2
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4000	Selected Topics in Music Performance	3
MU 4103	Form and Analysis	3
MU 4223	Music in Human Life	3
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Minor Required Courses ***12 Credits***

Students have to take minor elective courses according to their minor selection.

Jazz Minor

CIS 1501	Instrumental Instruction I	2
CIS 1502	Instrumental Instruction II	2
CIS 2503	Instrumental Instruction III	2
CIS 2504	Instrumental Instruction IV	2
CIS 3505	Instrumental Instruction V	2
CIS 3506	Instrumental Instruction VI	2
CIS 4507	Instrumental Instruction VII	2
CIS 4508	Instrumental Instruction VIII	2
CPS 3401	Performance Ear Training I	2
CPS 3402	Performance Ear Training II	2

Songwriting Minor

CMP 3204	Arranging for Song Writing	2
CMP 3303	Chord Scale Voicing for Arranging	2
CMP 3601	Song Writing	2
CMP 3602	Advanced Song Writing	2
CMP 3604	Jingle Writing	2
CMP 4110	Jazz Composition	2

Piano Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MC 2301	Accompaniment I	2
MC 2302	Accompaniment II	2

Harpsichord Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MC 3511	Introduction to Basso Continuo	2
MC 3512	Advanced Basso Continuo	2

Guitar Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MA 3501	Flamenco Techniques	2
MC 4212	Lute Tablature	2

Lute Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MC 3511	Introduction to Basso Continuo	2
MC 3512	Advanced Basso Continuo	2

Vocal Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MC 2511	Vocal Diction I	1
MC 2512	Vocal Diction II	1
MC 3513	Vocal Diction III	1
MC 3514	Vocal Diction IV	1

String, Percussion, Woodwind and Brass Minor

MA 1301	Applied Music I	2
MA 1302	Applied Music II	2
MA 2301	Applied Music III	2
MA 2302	Applied Music IV	2
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2





Composition Minor

CMP 4117	Counterpoint I	2
CMP 4118	Counterpoint II	2
MA 1101	Applied Composition I	2
MA 1102	Applied Composition II	2
MA 2101	Applied Composition III	2
MA 2102	Applied Composition IV	2

Minor Elective Courses — 6 Credits

Students have to take minor elective courses according to their minor selection.

Jazz Minor

CEL 1510	Pop / Rock Ensemble I	1
CEL 1511	Jazz Ensemble I	1
CEL 1512	Vocal Ensemble I	1
CEL 1513	Funk / Fusin Ensemble I	1
CEL 1514	Blue / R&B Ensemble I	1
CEL 1515	Latin Ensemble I	1
CEL 2510	Pop / Rock Ensemble II	1
CEL 2511	Jazz Ensemble II	1
CEL 2512	Vocal Ensemble II	1
CEL 2513	Funk / Fusin Ensemble II	1
CEL 2514	Blue / R&B Ensemble II	1
CEL 2515	Latin Ensemble II	1
CPS 1101	Jazz Improvisation I	2
CPS 1102	Jazz Improvisation II	2
CPS 2101	Jazz Improvisation III	2

Songwriting Minor

CMP 2601	Practical in Music Technology	3
CMP 2602	Song Demo Production	3
CMP 3105	Traditional Harmony I	2
CMP 3106	Traditional Harmony II	2
CMP 3603	Midi Production for All Media	3
CMP 3611	Vocal and Lyric Writing	2
CMP 4109	Reharmonization Techniques	2

Piano Minor

MC 3201	Keyboard Literature I	3
MC 3202	Keyboard Literature II	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Harpsichord Minor

MC 3201	Keyboard Literature I	3
MC 3202	Keyboard Literature II	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Guitar Minor

MC 3221	Guitar Literature I	3
MC 3222	Guitar Literature II	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Lute Minor

MC 3231	Lute Literature I	3
MC 3232	Lute Literature II	3
MC 4212	Lute Tablature	2
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Vocal Minor

MC 3241	Vocal Literature	3
MC 3242	Opera Literature	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

String, Percussion, Woodwind and Brass Minor

MU 2101	Orchestration	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2





MU 4103	Form and Analysis	3
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

Composition Minor

MU 1401	Computer for Musicians	3
MU 2101	Orchestration	3
MU 2501	Ensemble I*	2
MU 2502	Ensemble II*	2
MU 3110	Techniques of Modern Composition	3
MU 3501	Ensemble III*	2
MU 3502	Ensemble IV *	2
MU 4103	Form and Analysis	3
MU 4501	Ensemble V *	2
MU 4502	Ensemble VI *	2

* This is the sequential of Ensemble courses. If the student has passed one course, he will skip to the following one

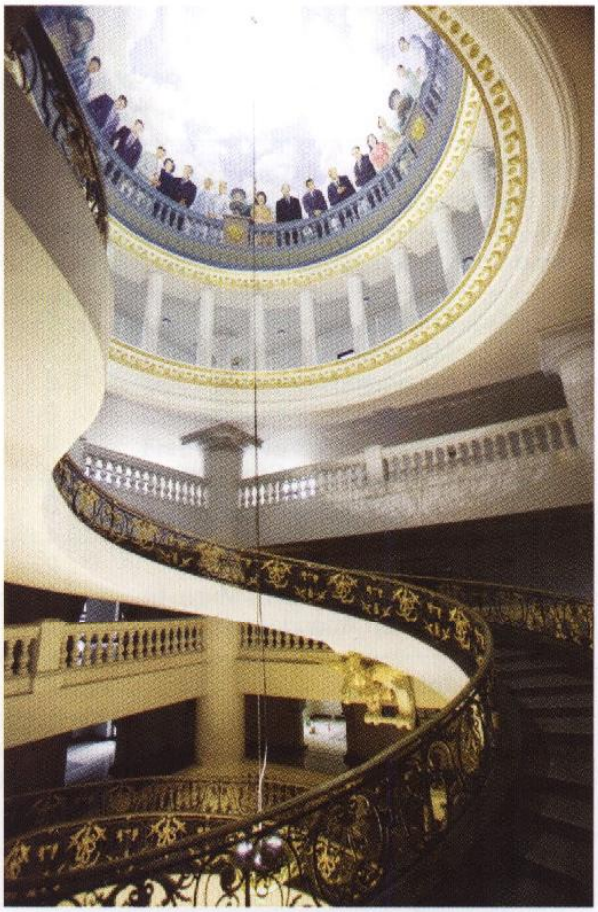
C. Free Elective Courses 6 Credits

Students can take free elective courses of 6 credits, which are offered by their faculty or by the different faculties upon completion of the prerequisites.

D. Free Elective Courses offered to non-music students

The following courses are offered as free elective to students from other faculties.

MA 1600	Basic Guitar Instructions	1
MA 1700	Basic Vocal Instructions	1
MU 1701	Jazz Music Appreciation	3
MU 1702	Popular Music Appreciation	3







STUDY PLAN
Jazz Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
CIS 1401	Keyboard Harmony I	2
CIS 1501	Instrumental Instruction I	2
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 7111	Concert Attendance I	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
CIS 1402	Keyboard Harmony II	2
CIS 1502	Instrumental Instruction II	2
GE 1301	Environmental Science	3
MA 2502	Chorus II	1
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance II	Non-credit
	Total	***19***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CEL 1101	Sight Reading Lab I	1
CIS 2503	Instrumental Instruction III	2
CPS 1101	Jazz Improvisation I	2
CPS 3401	Performance Ear Training I	2
GE 1201	Information Literacy Skills	1
MA 2503	Chorus III	1
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 7111	Concert Attendance III	Non-credit
	Total	***17***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CEL 1102	Sight Reading Lab II	1
CIS 2504	Instrumental Instruction IV	2
CPS 1102	Jazz Improvisation II	2
CPS 3402	Performance Ear Training II	2
MA 2504	Chorus IV	1
MGT 1101	Introduction to Business	3
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***






THIRD YEAR

First Semester

Course Code	Course Title	Credits
CIS 3505	Instrumental Instruction V	2
CMP 1201	Contemporary Arranging I	3
CPS 2101	Jazz Improvisation III	2
GE 2101	World Civilization	3
MU 3221	History of Western Music I	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	2
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CIS 3506	Instrumental Instruction VI	2
CMP 1202	Contemporary Arranging II	3
MGT 2404	Managerial Psychology	3
MU 3222	History of Western Music II	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	2
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
CIS 4507	Instrumental Instruction VII	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	5
	Minor Required Course (s)	2
	Minor Elective Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
CIS 4508	Instrumental Instruction VIII	2
CPS 4401	Jazz Recital	2
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	9
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***18***





STUDY PLAN
Songwriting Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
CIS 1401	Keyboard Harmony I	2
CIS 1501	Instrumental Instruction I	2
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 7111	Concert Attendance I	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
CIS 1402	Keyboard Harmony II	2
CIS 1502	Instrumental Instruction II	2
GE 1301	Environmental Science	3
MA 2502	Chorus II	1
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 1401	Computer for Musicians	3
MU 7111	Concert Attendance II	Non-credit
	Total	***19***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CEL 1101	Sight Reading Lab I	1
CIS 2503	Instrumental Instruction III	2
CMP 2601	Practicum in Music Technology	3
MA 2503	Chorus III	1
MGT 1101	Introduction to Business	3
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 7111	Concert Attendance III	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CEL 1102	Sight Reading Lab II	1
CIS 2504	Instrumental Instruction IV	2
CMP 1201	Contemporary Arranging I	3
MA 2504	Chorus IV	1
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***18***



THIRD YEAR
First Semester

Course Code	Course Title	Credits
CMP 1202	Contemporary Arranging II	3
CMP 3105	Traditional Harmony I	2
CMP 3601	Song Writing	2
CMP 3611	Vocal and Lyric Writing	2
GE 1201	Information Literacy Skills	1
MGT 2404	Managerial Psychology	3
MU 3221	History of Western Music I	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Course (s)	4
	Total	***19***

Second Semester

Course Code	Course Title	Credits
CMP 3106	Traditional Harmony II	2
CMP 3602	Advanced Song Writing	2
GE 2101	World Civilization	3
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Courses	6
	Total	***19***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
CMP 3204	Arranging for Song Writing	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	7
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
CMP 4110	Jazz Composition	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	7
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***





STUDY PLAN
Piano Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
GE 1201	Information Literacy Skills	1
MA 1301	Applied Music I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
GE 1301	Environmental Science	3
GE 2101	World Civilization	3
MA 1302	Applied Music II	2
MA 2502	Chorus II	1
MGT 1101	Introduction to Business	3
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***20***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 1200	Mathematics for Business	3
BG 2000	English III	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MC 2301	Accompaniment I	2
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 2501	Ensemble I	2
MU 7111	Concert Attendance III	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MC 2302	Accompaniment II	2
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2502	Ensemble II	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
MA 3301	Applied Music V	2
MC 3201	Keyboard Literature I	3
MGT 2404	Managerial Psychology	3
MU 3221	History of Western Music I	2
MU 3501	Ensemble III	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MA 3302	Applied Music VI	2
MC 3202	Keyboard Literature II	3
MC 3301	Junior Recital	2
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4710	Piano Pedagogy	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***





STUDY PLAN

Harpsichord Major

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
GE 1201	Information Literacy Skills	1
MA 1301	Applied Music I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
GE 1301	Environment Science	3
GE 2101	World Civilization	3
MA 1302	Applied Music II	2
MA 2502	Chorus II	1
MGT 1101	Introduction to Business	3
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***20***

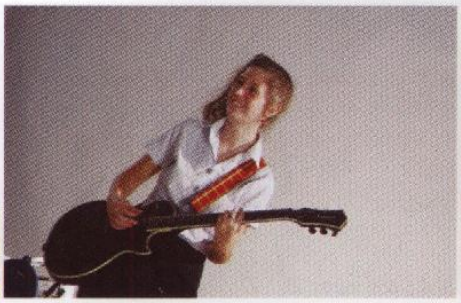
SECOND YEAR

Semester

Course Code	Course Title	Credits
BG 1200	Mathematics for Business	3
BG 2000	English III	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MC 3511	Introduction to Basso Continuo	2
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 2501	Ensemble I	2
MU 7111	Concert Attendance III	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 2202	Ethics	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MC 3502	Advanced Basso Continuo	2
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2502	Ensemble II	2
MU 7111	Concert Attendance IV	Non-credit
	Total	***18***


THIRD YEAR

First Semester

Course Code	Course Title	Credits
MA 3301	Applied Music V	2
MC 3201	Keyboard Literature I	3
MGT 2404	Managerial Psychology	3
MU 3221	History of Western Music I	2
MU 3501	Ensemble III	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
MA 3302	Applied Music VI	2
MC 3301	Junior Recital	2
MC 3302	Keyboard Literature II	3
MU 3222	History of Western Music II	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4711	Harpsichord Pedagogy	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***





STUDY PLAN
Guitar Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1201	Information Literacy Skills	1
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 1301	Applied Music I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1200	Mathematics for Business	3
MA 1302	Applied Music II	2
MA 2502	Chorus II	1
MGT 2404	Managerial Psychology	3
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***17***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
GE 1301	Environmental Science	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MGT 1101	Introduction to Business	3
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 2501	Ensemble I	2
MU 7111	Concert Attendance III	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 1201	World Civilization	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2502	Ensemble II	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
MA 3301	Applied Music V	2
MA 3501	Flamenco Techniques	2
MC 3221	Guitar Literature I	3
MC 4212	Lute Tablature	2
MU 3221	History of Western Music I	2
MU 3501	Ensemble III	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***20***

Second Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MA 3302	Applied Music VI	2
MC 3222	Guitar Literature II	3
MC 3301	Junior Recital	2
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

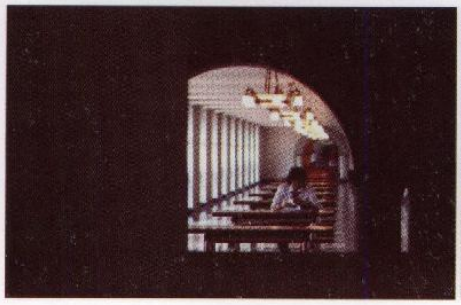
FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4713	Guitar Pedagogy	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***





STUDY PLAN
Lute Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1201	Information Literacy Skills	1
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 1301	Applied Music I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1200	Mathematics for Business	3
MA 1302	Applied Music II	2
MA 2502	Chorus II	1
MGT 2404	Managerial Psychology	3
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***17***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
GE 1301	Environmental Science	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MGT 1101	Introduction to Business	3
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 2501	Ensemble I	2
MU 7111	Concert Attendance III	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 2101	World Civilization	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2502	Ensemble II	2
MU 4223	Music in Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
MA 3301	Applied Music V	2
MC 3231	Lute Literature I	3
MC 3511	Introduction to Basso Continuo	2
MU 3221	History of Western Music I	2
MU 3501	Ensemble III	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MA 3302	Applied Music VI	2
MC 3232	Lute Literature II	3
MC 3301	Junior Recital	2
MC 4212	Lute Tablature	2
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Course (s)	2
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4713	Lute Pedagogy	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	6
	Minor Required Courses	4
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 7111	Concert Attedence VIII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***





STUDY PLAN
Vocal Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1201	Information Literacy Skills	1
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 1301	Applied Music I	2
MA 1401	Piano Harmony I	2
MA 2501	Chorus I	1
MC 2511	Vocal Diction I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 7111	Concert Attendance I	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1200	Mathematics for Business	3
MA 1302	Applied Music II	2
MA 1402	Piano Harmony II	2
MA 2502	Chorus II	1
MC 2512	Vocal Diction II	1
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance II	Non-credit
	Total	***20***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
GE 1301	Environmental Science	3
GE 2202	Ethics	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MC 3513	Vocal Diction III	1
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 7111	Concert Attendance III	Non-credit
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MC 2242	Opera Staging	2
MC 3514	Vocal Diction IV	1
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 4223	Music of Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***17***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
GE 2101	World Civilization	3
MA 3301	Applied Music V	2
MC 3241	Vocal Literature	3
MGT 1101	Introduction to Business	3
MU 3221	History of Western Music I	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***20***

Second Semester

Course Code	Course Title	Credits
MA 3302	Applied Music VI	2
MC 3242	Opera Literature	3
MC 3301	Junior Recital	2
MGT 2404	Managerial Psychology	3
MU 3222	History of Western Music II	2
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4714	Vocal Pedagogy	2
MU 4221	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***





STUDY PLAN

String, Percussion, Woodwind and Brass Major

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 1301	Applied Music I	2
MA 1401	Piano Harmony I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1200	Mathematics for Business	3
GE 1201	Information Literacy Skills	1
MA 1302	Applied Music II	2
MA 1402	Piano Harmony II	2
MA 2502	Chorus II	1
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***17***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
GE 1301	Environmental Science	3
MA 2301	Applied Music III	2
MA 2503	Chorus III	1
MGT 2404	Managerial Psychology	3
MU 0103	Ear Training III	2
MU 2113	Theory of Western Music III	3
MU 2501	Ensemble I	2
MU 7111	Concert Attendance III	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 2202	Ethics	3
MA 2302	Applied Music IV	2
MA 2504	Chorus IV	1
MU 0104	Ear Training IV	2
MU 2114	Theory of Western Music IV	3
MU 2502	Ensemble II	2
MU 4223	Music of Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***





THIRD YEAR
First Semester

Course Code	Course Title	Credits
GE 2101	World Civilization	3
MGT 1101	Introduction to Business	3
MA 3301	Applied Music V	2
MU 3211	History of Western Music I	2
MU 3501	Ensemble III	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MA 3302	Applied Music VI	2
MC 3301	Junior Recital	2
MU 3222	History of Western Music II	2
MU 3502	Ensemble IV	2
MU 7111	Concert Attendance VI	Non-credit
	Major Elective Courses	4
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
MA 4301	Applied Music VII	2
MC 4715	String Pedagogy *(for String only)*	2
or MC 4716	Percussion Pedagogy *(for Percussion only)*	2
or MC 4717	Woodwind Pedagogy *(for Woodwind only)*	2
or MC 4718	Brass Pedagogy *(for Brass only)*	2
MU 4221	History of Western Music III	2
MU 4501	Ensemble V	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	4
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
MA 4302	Applied Music VIII	2
MC 4301	Senior Recital	4
MU 4502	Ensemble VI	2
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***





STUDY PLAN
Composition Major

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For International students)*	3
MA 1101	Applied Composition I	2
MA 1401	Piano Harmony I	2
MA 2501	Chorus I	1
MU 0101	Ear Training I	2
MU 1111	Theory of Western Music I	3
MU 2211	History of Thai Music	3
MU 7111	Concert Attendance I	Non-credit
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1200	Mathematics for Business	3
GE 1201	Information Literacy Skills	1
GE 1301	Environmental Science	3
MA 1102	Applied Composition II	2
MA 2502	Chorus II	1
MU 0102	Ear Training II	2
MU 1112	Theory of Western Music II	3
MU 7111	Concert Attendance II	Non-credit
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
MA 2101	Applied Composition III	2
MA 2503	Chorus III	1
MGT 1101	Introduction to Business	3
MU 0103	Ear Training III	2
MU 2101	Orchestration	3
MU 2113	Theory of Western Music III	3
MU 7111	Concert Attendance III	Non-credit
	Total	***17***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 2101	World Civilization	3
MA 2102	Applied Composition IV	2
MA 2504	Chorus IV	1
MU 0104	Ear Training IV	2
MU 2102	Conducting	2
MU 2114	Theory of Western Music IV	3
MU 4223	Music of Human Life	3
MU 7111	Concert Attendance IV	Non-credit
	Total	***19***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
CMP 4117	Counterpoint I	2
MA 3101	Applied Composition V	2
MU 1401	Computer for Musicians	3
MU 3110	Techniques of Modern Composition	3
MU 3221	History of Western Music I	2
MU 7111	Concert Attendance V	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
CMP 4118	Counterpoint II	2
MA 3102	Applied Composition VI	2
MGT 2404	Managerial Psychology	3
MU 3222	History of Western Music II	2
MU 4103	Form and Analysis	3
MU 7111	Concert Attendance VI	Non-credit
	Minor Required Courses	4
	Minor Elective Course (s)	3
	Total	***19***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MA 4101	Applied Composition VII	2
MU 4223	History of Western Music III	2
MU 7111	Concert Attendance VII	Non-credit
	Major Elective Courses	6
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
MA 4102	Applied Composition VIII	2
MC 4302	Recital for Composition	4
MU 7111	Concert Attendance VIII	Non-credit
	Major Elective Courses	8
	Minor Required Course (s)	2
	Free Elective Course (s)	3
	Total	***19***

SCHOOL OF NURSING SCIENCE

Curriculum Structure

Courses	*Credits*
General Education Courses	30
Basic Professional Courses	28
Nursing Professional Courses:	
- Theory	52
- Practicum	29
Free Elective Courses	6
Total	*145*

OBJECTIVES

The Nursing Science Program of Au aims to educate qualified professional nursing graduates who:

1. Exercise leadership, moral and ethical mind in daily life and working;
2. Demonstrate sense of maturity; assertiveness and social accountability;
3. Have knowledge in nursing science and related sciences, and able to apply it in nursing practice by demonstrating professionalism and good management;
4. Have ability and skills in nursing informatics, numerical and statistics analysis;
5. Use critical thinking skills in problem solving and utilize the scientific process in conducting research;
6. Are able to establish interpersonal relationships and effectively collaborate among health care team;
7. Are able to communicate in English with clients and health care team effectively by being multi-cultural sensitive;
8. Perform nursing practice with caring and compassionate attitude according to the role and scope of the profession, and the professional code of ethics in providing holistic health services using client-centered approach;
9. Demonstrate faith, good attitude toward nursing profession and perform self development for the professional growth.





GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Nursing Science to students who meet all the following requirements:

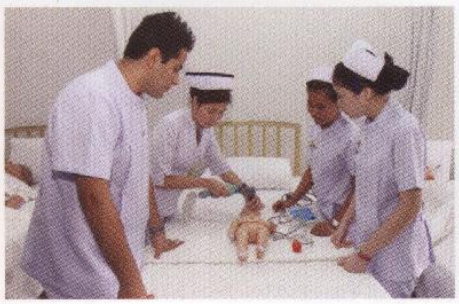
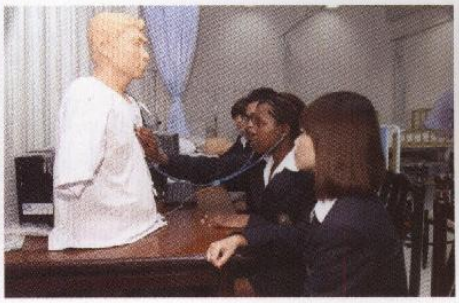
- Complete a minimum of 145 credits of the program
- Obtain at least "C" grade in all professional courses
- Participate in 16 sessions of the student assembly in Business and Professional Ethics Seminar
- Earn a cumulative grade point average of at least 2.00 ("C" average)
- Demonstrate good behavior and self-discipline by obtaining at least 70% of disciplinary scores
- Have library and financial clearance with the university

COURSES

General Education Courses		***30 Credits***
BG 1001	English I	3
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
BG 2000	English III	3
BG 2001	English IV	3
BG 2301	Information Technology for Nurses	2
GE 1401	Language and Communication Skills (For International students)	3
GE 1403	Communication in Thai (For Thai students)	3
GE 1204	Physical Education	1
GE 1301	Environmental Science	3
GE 2202	Ethics	3
GE 2101	World Civilization	3

Basic Professional Courses		***28 Credits***
NB 1202	Anatomy	3
NB 1203	Physiology	3
NB 1205	Biochemistry	3
NB 1207	Microbiology and Parasitology	3
NB 1210	Pathophysiology	3
NB 1212	Nutrition for Healthy Life Style	3
NB 2209	Pharmacology	3
NB 2211	Multiculutralism in Health Care	1
NB 2212	Psychology and Mental Health	2
NB 2213	Health Innovation and Knowledge Management	1
NB 4201	Entrepreneurship in Health Care	3

Nursing Professional Courses		***81 Credits***
Theory		***52 Credits***
NS 1307	Foundation of Professional Nursing I	2
NS 1310	Professional Socialization I	2
NS 1311	Scientific Nursing Approach and Holistic Health Assessment	3
NS 1312	Health Promotion throughout Lifespan	2
NS 1313	Foundation of Professional Nursing II	2
NS 2310	Alteration in Adult Health and Nursing I	3
NS 2311	Alteration in Adult Health and Nursing II	3
NS 2312	Gerontology Nursing	1
NS 2320	Family-Centered Care for Infant, Child, and Adolescent I	2
NS 2321	Family-Centered Care for Infant, Child, and Adolescent II	3
NS 2322	Holistic Childbearing and Family Nursing I	3
NS 2323	Holistic Childbearing and Family Nursing II	2
NS 3316	Critical Care Nursing	2
NS 3322	Bio-Behavioral-Psychiatric Nursing	3
NS 3323	Community Focused Nursing I	2
NS 3324	Disaster Nursing	1
NS 3325	Holistic Childbearing and Family Nursing III	3
NS 3326	Nursing Inquiry I	2
NS 4308	Nursing Leadership and Management	3
NS 4320	Community Focused Nursing II	3
NS 4322	Professional Socialization II	2
NS 4323	Therapeutic Health Assessment	2
NS 4325	Nursing Informatics	1


Practicum		*29 Credits*
NS 1403	Nursing Experience I	1
NS 1404	Nursing Experience II	1
NS 2418	Clinical Practicum for Professional Nursing Foundation	2
NS 2419	Clinical Practicum in Adult Health Nursing I	2
NS 2420	Clinical Practicum in Adult Health Nursing II	2
NS 2422	Holistic Childbearing and Family Nursing Practicum I	1
NS 2423	Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum I	1
NS 3400	Mental Health and Psychiatric Nursing Practicum	2
NS 3401	Nursing Inquiry II	1
NS 3425	Holistic Childbearing and Family Nursing Practicum II	2
NS 3422	Holistic Childbearing and Family Nursing Practicum III	2
NS 3423	Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum II	2
NS 3424	Critical Care Nursing Practicum	2
NS 4413	Nursing Leadership and Management Practicum	2
NS 4417	Community Focused Nursing Practicum	3
NS 4418	Therapeutic Health Assessment Practicum	1
NS 4419	Comprehensive Nursing Practicum	2

Free Elective Course		*6 Credits*
NE 3501	Spa and Aroma Therapy	3
NE 3502	Massage as an Alternative Health Care	3
NE 3505	Oriental Exercise for Health	3
NE 4502	Adolescent Health	3







STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	Credits
BG 1001	English I	3
GE 1401	Language and Communication Skills (For International students)	3
GE 1403	Communication in Thai (For Thai students)	3
NB 1202	Anatomy	3
NB 1203	Physiology	3
NB 1205	Biochemistry	3
NB 1207	Microbiology and Parasitology	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
GE 1204	Physical Education	1
NB 1210	Pathophysiology	3
NB 1212	Nutrition for Healthy Life Style	3
NS 1307	Foundation of Professional Nursing I	2
NS 1311	Scientific Nursing Approach and Holistic Health Assessment	3
NS 1312	Health Promotion throughout Lifespan	2
NS 1403	Nursing Experience I	1
	Total	***18***

Summer Session

Code	Subjects	Credits
NS 1310	Professional Socialization I	2
NS 1313	Foundation of Professional Nursing II	2
NS 1404	Nursing Experience II	1
NB 2211	Multiculutralism in Health Care	1
	Total	***6***







SECOND YEAR

First Semester

Code	Subjects	Credits
BG 2000	English III	3
NB 2209	Pharmacology	3
NS 2310	Alteration in Adult Health and Nursing I	3
NS 2312	Gerontology Nursing	1
NS 2320	Family-Centered Care for Infant, Child, and Adolescent I	2
NS 2418	Clinical Practicum for Professional Nursing Foundation	2
NS 2419	Clinical Practicum in Adult Health Nursing I	2
	Total	***16***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
BG 2301	Information Technology for Nurses	2
NS 2311	Alteration in Adult Health and Nursing II	3
NB 2212	Psychology and Mental Health	2
NS 2322	Holistic Childbearing and Family Nursing I	3
NS 2420	Clinical Practicum in Adult Health Nursing II	2
NS 2423	Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum I	1
NB 2213	Health Innovation and Knowledge Management	1
	Total	***17***

Summer Session

Code	Subjects	Credits
NS 2321	Family-Centered Care for Infant, Child, and Adolescent II	3
NS 2323	Holistic Childbearing and Family Nursing II	2
NS 2422	Holistic childbearing and Family Nursing Practicum I	1
	Total	***6***







THIRD YEAR

First Semester

Code	Subjects	Credits
GE 1301	Environmental Science	3
BG 1301	Fundamentals of Statistics	3
NS 3325	Holistic Childbearing and Family Nursing III	3
NS 3326	Nursing Inquiry I	2
NS 3423	Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum II	2
NS 3425	Holistic Childbearing and Family Nursing Practicum II	2
	Total	***15***

Second Semester

Code	Subjects	Credits
GE 2101	World Civilization	3
NS 3401	Nursing Inquiry II	1
NS 3316	Critical Care Nursing	2
NS 3322	Bio-Behavioral-Psychiatric Nursing	3
NS 3422	Holistic Childbearing and Family Nursing Practicum III	2
NS 3424	Critical Care Nursing Practicum	2
	One Free Elective Course	3
	Total	***16***

Summer Session

Code	Subjects	Credits
NS 3323	Community Focused Nursing I	2
NS 3324	Disaster Nursing	1
NS 3400	Mental Health and Psychiatric Nursing Practicum	2
	Total	***5***





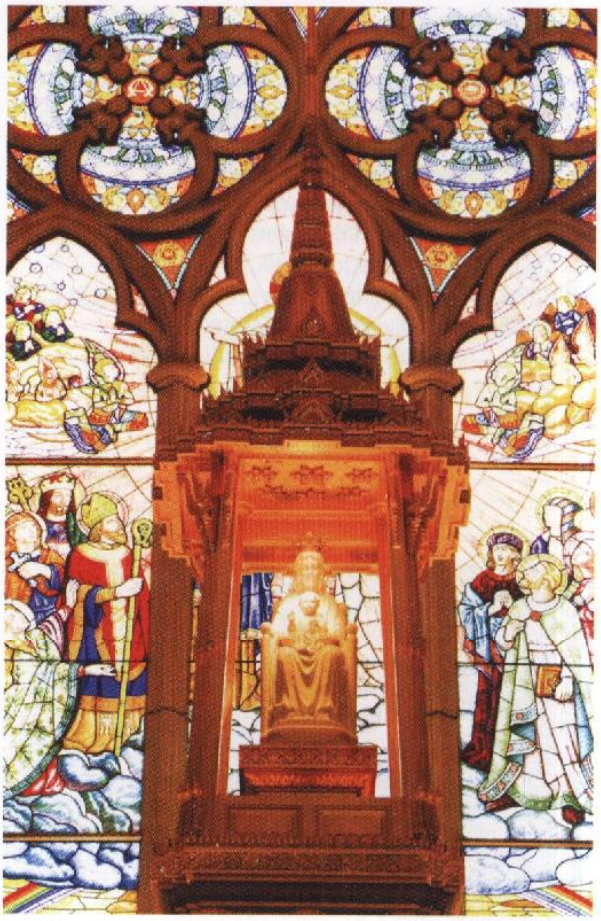


FOURTH YEAR
First Semester

Code	Subjects	Credits
GE 2202	Ethics	3
NS 4308	Nursing Leadership and Management	3
NS 4320	Community Focused Nursing II	3
NS 4323	Therapeutic Health Assessment	2
NS 4417	Community Focused Nursing Practicum	3
NS 4418	Therapeutic Health Assessment Practicum	1
	One Free Elective Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
NB 4201	Entrepreneurship in Health Care	3
NS 4322	Professional Socialization II	2
NS 4325	Nursing Informatics	1
NS 4413	Nursing Leadership and Management Practicum	2
NS 4419	Comprehensive Nursing Practicum	2
	Total	***10***



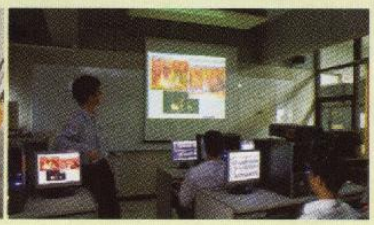


SCHOOL OF SCIENCE AND TECHNOLOGY

Curriculum Structure

Courses	CS	IT	TS	DA	MT
A. General Education Courses	30	30	30	30	30
• Language Courses	12	12	12	12	12
• Social Science Courses	6	6	6	6	6
• Humanities Courses	3	3	3	3	3
• Science and Mathematics Courses	9	9	9	9	9
B. Specialized Courses	106	105	106	104	104
• Basic Courses	45	39	40	41	44
• Major Required Courses	31	33	36	30	30
• Specialized Required Course				18	
• Major Elective Courses	30	33	30	15	30
C. Free Electives Courses	6	6	6	6	6
Total Credits	**142**	**141**	**142**	**140**	**140**

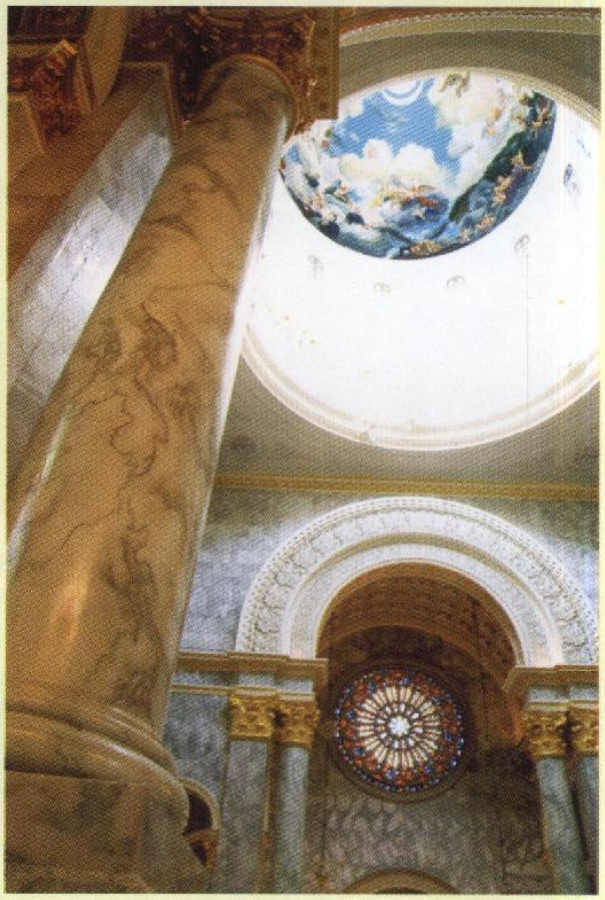




GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Science upon students who meet all of the following requirements:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point aver age of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline



DEPARTMENT OF COMPUTER SCIENCE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:The program is designed to produce graduates who:

- Have morals and ethics.
- Socially responsible and understand well the impacts and consequences of technology towards society and the environment.
- Have the knowledge and understanding of the major principles and theories of computer science.
- Capable of developing the fundamentals of computer programs and with the expertise to analyze, operate and manage computer systems.
- Able to understand the organization and operation of the computer hardware.
- Able to help in the promotion and collaboration of transfer technology which is undergoing rapid development.
- Capable of meeting the nation's present and future needs for computer science experts in the application and development for computer planning.
- Possess systematical, logical and critical thinking skills.
- Able to work with a team and be a leader or a follower.
- Have responsibility in the assigned tasks and continuously have self-development in the field of computer science.
- Able to communicate effectively in listening, speaking, reading and writing both in Thai and English.

COURSES

A. General Education Courses **30 credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT1101	Introduction to Business	3

Humanities Courses ***3 credits***

GE 2101	World Civilization	3

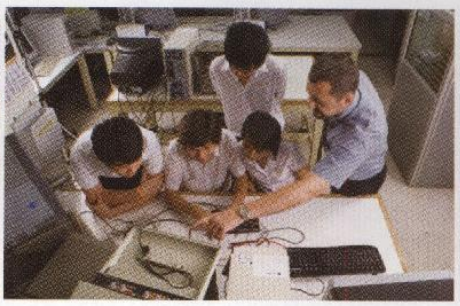
Science and Mathematics Courses ***9 credits***

DA 1121	Basic Mathematics and Statistics	3
DA 2103	Principles of Statistics	3
MT 4201	Social Interests, Government Policies and Technology	3

B. Specialized Courses **106 credits**

Basic Courses ***39 credits***

ACT 1602	Fundamentals of Financial Accounting I	3
DA 2101	Calculus I	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
IT 2130	Systems Science	3
IT 2231	Introduction to Information Technology	3
LA 4606	Intellectual Property Law	3
MGT 2900	Principles of Management	3
SC 1101	Computer Programming I	4
SC 2101	Computer Programming II	4
SC 2210	Files Organization	3
SC 2220	Computer Organization	3
SC 2231	Mathematics Foundation for Computer Science	3
TS 1201	Physics	4


Major Required Courses ***31 credits***

SC 2211	Data Structures and Algorithms	3
SC 2212	Database Systems	3
SC 2213	Advance Programming	4
SC 3210	Programming Language	3
SC 3211	Operating Systems	3
SC 3220	Computer Architecture	3
SC 3230	Theory of Computation	3
SC 3231	Algorithm Design	3
SC 3351	Computer Network	3
SC 4299	Senior Projects	3

Major Elective Courses ***30 credits***

Major elective courses are divided into two groups. Students need to study majorelective courses according to the following conditions.

Group 1: Students are required to select at least 7 courses (21 credits).

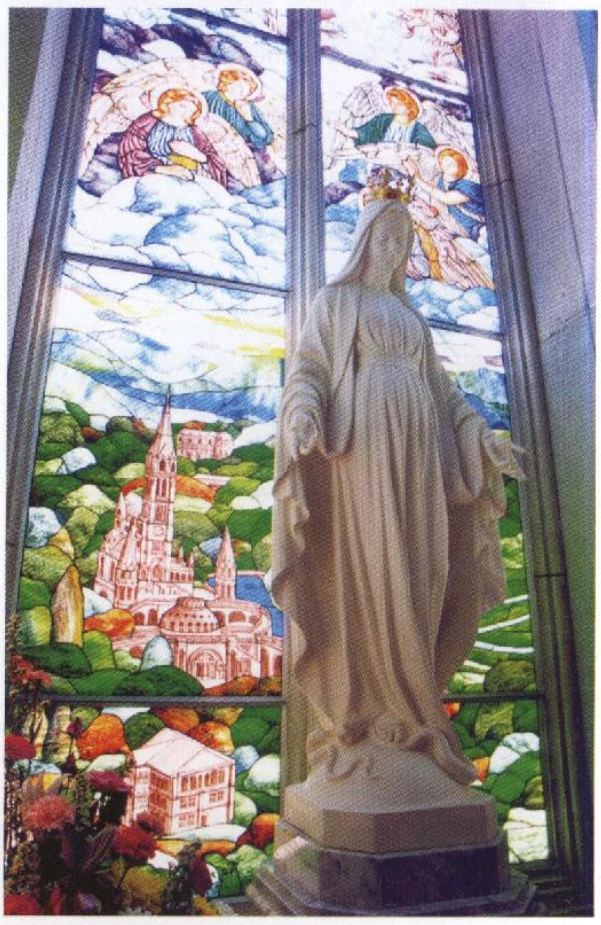
SC 3320	Digital System Design	3
SC 4310	Software Engineering	3
SC 4311	Computer Graphics	3
SC 4312	Compiler Construction	3
SC 4320	Introduction to Microprocessors	3
SC 4321	VLSI Technology	3
SC 4330	Numerical Analysis	3
SC 4331	Formal Languages and Automata	3
SC 4332	Artificial Intelligence Concepts	3
SC 4333	System Analysis and Design	3
SC 4340	Neural Network	3
SC 4341	Machine Learning	3
SC 4352	Image Processing	3
SC 4370	Object-Oriented Concepts	3
SC 4371	Selected Computer Language	3
SC 4372	System Programming	3
SC 4373	Web Application Development	3
SC 4374	Enterprise Application Development	3
SC 4375	3D Graphical Programming	3
SC 4381	Computer and Information Security	3
SC 4400-99	Selected Topics	3

Group 2: Additional courses to fulfill the Major Elective Requirements

DA 2204	Statistical Packages	3
DA 3305	Data Mining Method	3
DA 4301	Operation Research I	3
DA 4302	Operation Research II	3
DA 4319	Introduction to Simulation	3
IT 3230	Management Information System	3
IT 4360	Multimedia Applications	3
TS 4261	Internetworking Workshop I	4
TS 4262	Internetworking Workshop II	4

C. Free Elective Courses **6 credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
DA 1121	Basic Mathematics and Statistics	3
IT 2231	Introduction to Information Technology	3
MGT 1101	Introduction to Business	3
TS 1201	Physics	4
	Total	***16***

Second Semester

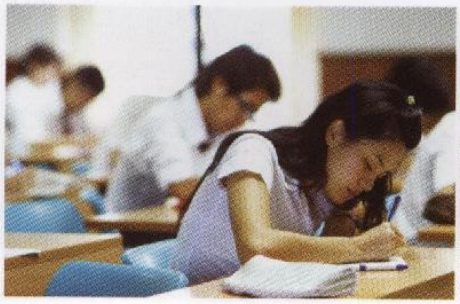
Course Code	Course Title	Credits
ACT1602	Fundamentals of Financial Accounting I	3
BG 1002	English II	3
DA 2101	Calculus I	3
DA 2103	Principles of Statistics	3
GE 2101	World Civilization	3
SC 1101	Computer Programming I	4
	Total	***19***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
DA 2102	Calculus II	3
IT 2130	System Science	3
MGT 2900	Principles of Management	3
SC 2101	Computer Programming II	4
SC 2231	Mathematics Foundation for Computer Science	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
DA 2203	Probability and Statistical Methods	3
SC 2210	Files Organization	3
SC 2211	Data Structures and Algorithms	3
SC 2213	Advanced Programming	4
SC 2220	Computer Organization	3
	Total	***19***





Third Year
First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
SC 2212	Database Systems	3
SC 3210	Programming Languages	3
SC 3211	Operating Systems	3
SC 3220	Computer Architectures	3
SC 3230	Theory of Computation	3
	Total	***18***

Second Semester

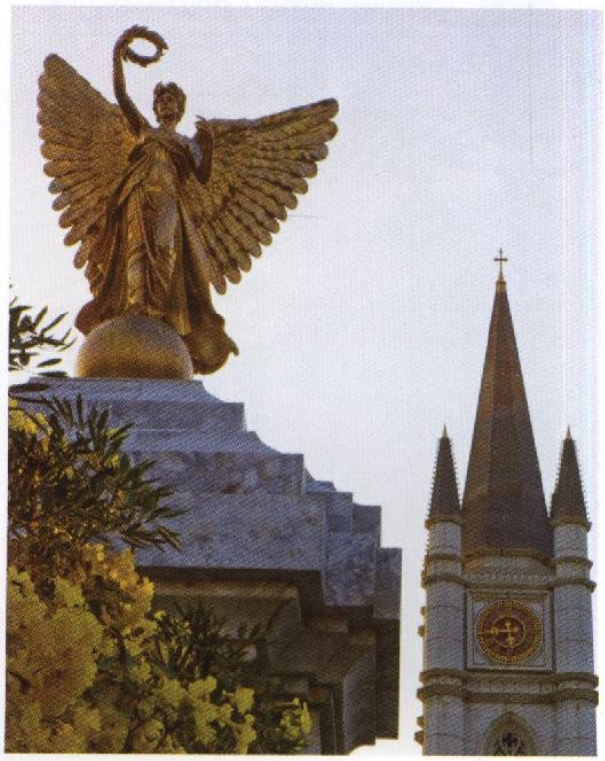
Course Code	Course Title	Credits
LA 4606	Intellectual Property Law	3
SC 3231	Algorithm Design	3
SC 3351	Computer Networks	3
	Three Major Elective Courses	9
	Total	***18***

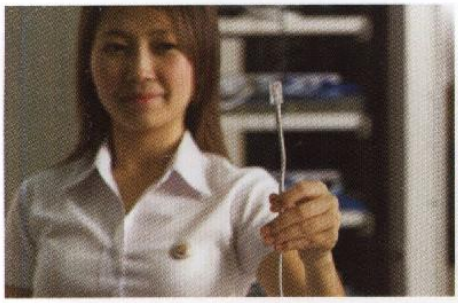
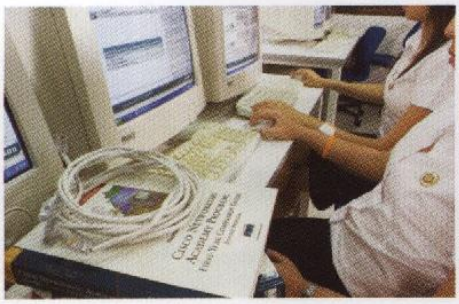
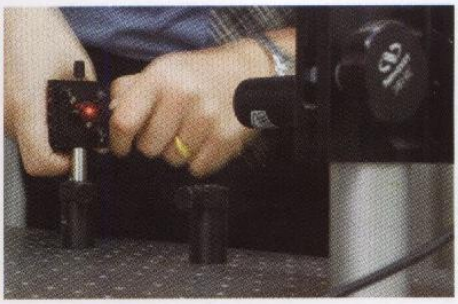
Fourth Year
First Semester

Course Code	Course Title	Credits
MT 4201	Social Interest, Government Policy and Technology	3
TS 4299	Senior Project	3
	Three Major Elective Courses	9
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
	Four Major Elective Courses	12
	One Free Elective Course	3
	Total	***15***



DEPARTMENT OF INFORMATION TECHNOLOGY

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:The program is designed to produce graduates who:

- Have morals and ethics.
- Understand and responsible for the impacts and consequences of technology towards society and the environment.
- Have the knowledge and understanding of the major principles and theories of information technology.
- Able to manage and develop information systems and communication network.
- Capable of applying new technology in the design, operation, linkage, control and management of information systems.
- Possess systematical, logical and critical thinking skills.
- Able to provide advice and coordinate the services needed by executives in both internal and external units of organizations.
- Able to provide solutions related to information systems in the dynamic environment.
- Work with a team and can be a leader or a follower
- Have responsibility in the assigned tasks and continuously have self-development in the field of information technology.
- Able to communicate effectively in listening, speaking, reading and writing both in Thai and English.

COURSES

A. General Education Courses **30 credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT1101	Introduction to Business	3

Humanities Course ***3 credits***

GE 2101	World Civilization	3

Science and Mathematics Courses ***9 credits***

DA 1121	Basic Mathematics and Statistics	3
DA 2103	Principles of Statistics	3
MT 4201	Social Interests, Government Policies and Technology	3

B. Specialized Courses **105 credits**

Basic Courses ***39 credits***

ACT 1602	Fundamentals of Financial Accounting I	3
ACT 1603	Fundamentals of Financial Accounting II	3
DA 2101	Calculus I	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
IT 2130	Systems Science	3
IT 2172	Programming Workshop	4
IT 2231	Introduction to Information Technology	3
LA 4606	Intellectual Property Law	3
MGT2900	Principles of Management	3
SC 1101	Computer Programming I	4
TS 1201	Physics	4





Major Required Courses ***33 credits***

IT 2210	File Structures and Processing	3
IT 2220	Computer System Concepts	3
IT 2230	Information Structures	3
IT 3210	Database Management Systems	3
IT 3211	Information Storage and Retrieval	3
IT 3230	Management Information Systems	3
IT 3231	Information Systems Analysis	3
IT 3232	Information Systems Design	3
IT 3253	Data Communication and Networking	3
IT 4299	Senior Projects	3
IT 4360	Multimedia Applications	3

Major Elective Courses ***33 credits***

Major Elective courses are divided into three Groups. Students need to study major elective courses from each group according to the following conditions.

Group 1: Students must select at least 2 courses (6 credits).

IT 2371	Object Oriented Programming I	3
IT 3371	Object Oriented Programming II	3
IT 3372	Visual Programming	3

Group 2: Students must select at least 3 courses (9 credits).

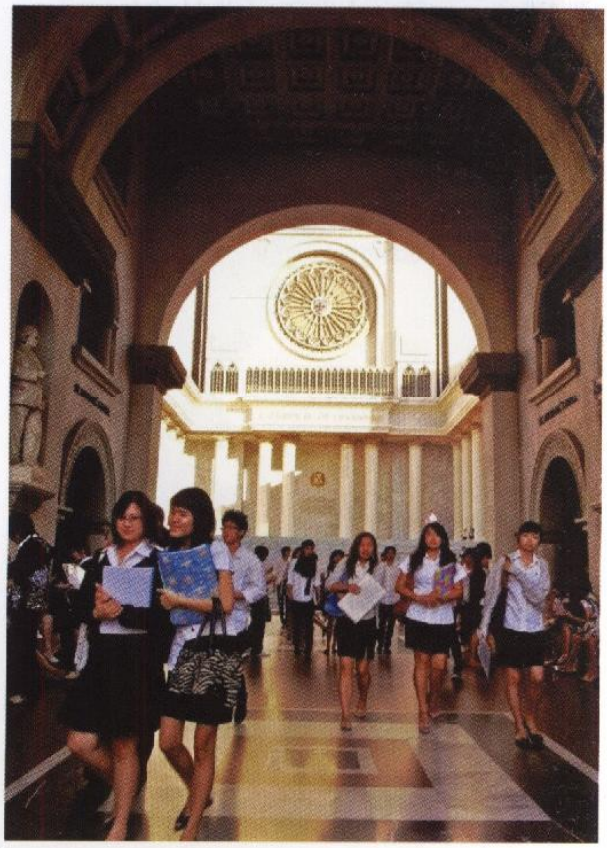
IT 3351	Web Design and Development I	3
IT 3352	Database Application Workshop	3
IT 4314	Software Engineering Concepts	3
IT 4315	Object Oriented Concept in Analysis and Design	3
IT 4366	Advanced Data Management Systems	3
IT 4367	Web Design and Development II	3

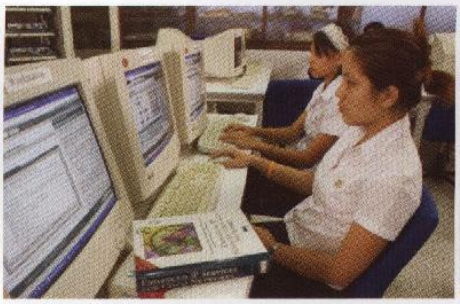
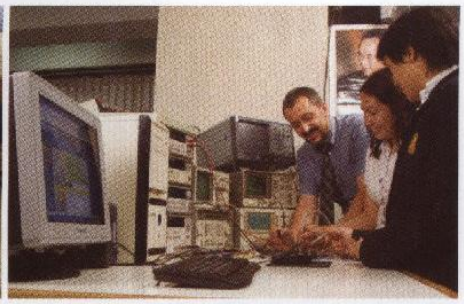
Group 3: Students must select at least 2 courses (6 credits).

IT 4311	Introduction to Computer Graphics	3
IT 4316	Image Processing	3
IT 4340	Introduction to Information Resource Management	3
IT 4357	Human Computer Interaction	3
IT 4358	Expert Systems	3
IT 4359	E-Commerce	3
IT 4363	Information System Security and Auditing	3
IT 4400-99	Selected Topic	3
DA 2204	Statistical Packages	3

C. Free Elective Courses **6 credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).



STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
DA 1121	Basic Mathematics and Statistics	3
IT 2231	Introduction to Information Technology	3
MGT 1101	Introduction to Business	3
TS 1201	Physics	4
	Total	***16***

Second Semester

Course Code	Course Title	Credits
ACT1602	Fundamentals of Financial Accounting I	3
BG 1002	English II	3
DA 2101	Calculus I	3
DA 2103	Principles of Statistics	3
GE 2101	World Civilization	3
SC 1101	Computer Programming I	4
	Total	***19***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
ACT1603	Fundamentals of Financial Accounting II	3
BG 2000	English III	3
DA 2102	Calculus II	3
IT 2172	Programming Workshop	4
IT 2220	Computer Systems Concepts	3
MGT 2900	Principles of Management	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
DA 2203	Probability and Statistical Methods	3
IT 2130	Systems Science	3
IT 2210	File Structures and Processing	3
IT 2230	Information Structures	3
	One Major Elective Course from Group I	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
IT 3210	Database Management Systems	3
IT 3230	Management Information Systems	3
IT 3231	Information Systems Analysis	3
IT 3253	Data Communication and Networking	3
	One Major Elective Course from Group I	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
IT 3211	Information Storage and Retrieval	3
IT 3232	Information Systems Design	3
LA4606	Intellectual Property Law	3
	Three Major Elective Courses	9
	Total	***18***

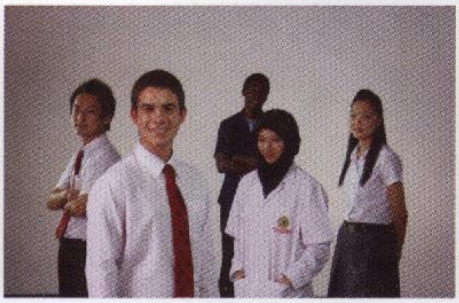
FOURTH YEAR

First Semester

Course Code	Course Title	Credits
IT 4299	Senior Projects	3
MT 4201	Social Interests, Government Policies and Technology	3
	Three Major Elective Courses	9
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
IT 4360	Multimedia Applications	3
	Three Major Elective Courses	9
	One Free Elective Course	3
	Total	***15***


DEPARTMENT OF TELECOMMUNICATIONS SCIENCE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have morals, ethics, and self discipline.
- Understand and are responsible for the impacts and consequences of technology towards society and the environment.
- Have telecommunications technology skills to serve the market demands in the fields of telecommunications, data communications, and computer communications engineering.
- Can effectively apply telecommunication technology to improve performances and qualities of various telecommunication systems in business and industries.
- Can integrate the concepts and techniques from various study sources and apply them to solve the complicated problems.
- Possess systematical, logical and critical thinking skills.
- Are able to identify and isolate the problems, obtain relevant information, analyze alternative solutions, and implement chosen solutions.
- Can work with a team and can be a leader or a follower.
- Have responsibility in the assigned tasks and continuously have self-development in the field of Telecommunications Science.
- Are able to communicate effectively in listening, speaking, reading and writing both in Thai and English.

COURSES

A. General Education Courses **30 Credits**

Language Courses ***12 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 Credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***3 Credits***

GE 2101	World Civilization	3

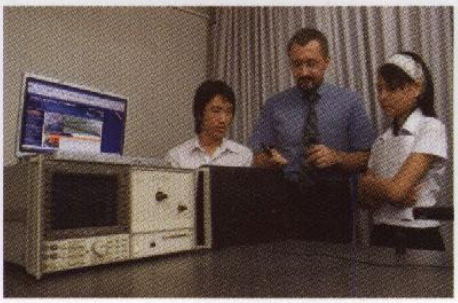
Science and Mathematics Courses ***9 Credits***

DA 1121	Basic Mathematics and Statistics	3
DA 2103	Principles of Statistics	3
MT 4201	Social Interests, Government Policies and Technology	3

B. Specialized Courses: **106 Credits**

Basic Courses ***40 Credits***

ACT 1602	Fundamentals of Financial Accounting I	3
DA 2101	Calculus I	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
IT 2130	Systems Science	3
IT 2172	Programming Workshop	4
IT 2231	Introduction to Information Technology	3
LA 4606	Intellectual Property Law	3
MGT 2900	Principles of Management	3
SC 1101	Computer Programming I	4
TS 1201	Physics	4
TS 2222	Introduction to Circuits and Electronics	4





Major Required Courses ***36 Credits***

TS 2231	Mathematics for Telecommunications	3
TS 2242	Communication Signal and Systems	4
TS 3230	Telecommunications System and Technology	3
TS 3254	Digital Communications	4
TS 3256	Computer Networks and Open Systems	4
TS 3257	Coding for Communications	3
TS 4255	Wireless Communication Systems	4
TS 4261	Internetworking Workshop I	4
TS 4262	Internetworking Workshop II	4
TS 4299	Senior Project	3

Major Elective Courses ***30 Credits***

Major Elective courses are divided into two Groups.

Group 1: Student must select at least 8 courses.

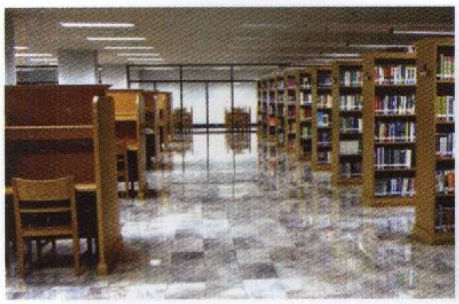
TS 3332	Switching and Signaling Systems	3
TS 3338	Cryptography and Data Security	3
TS 3339	Introduction to Electromagnetic Field	3
TS 3350	Analog Communications	3
TS 3357	Computer Application in Telecommunications	3
TS 3359	Probability and Queuing Theory	3
TS 4332	Economics in Telecommunications Systems	3
TS 4333	Telecommunications Policy, Law, Regulation and Standard	3
TS 4335	Network Management and Controls	3
TS 4336	Operation Research	3
TS 4352	Satellite Communication Systems	3
TS 4353	Voice and Data Integration	3
TS 4355	Multimedia for Communications	3
TS 4356	Network Design and Analysis	3
TS 4357	Cellular Mobile Systems	3
TS 4363	Optical Fiber Communications	3
TS 4365	Antenna Systems and Design	3
TS 4366	Information Theory and Coding	3
TS 4367	Introduction to Simulation forTelecommunications System	3
TS 4370	Performance Evaluation of Telecommunication Systems	3
TS 4388	Scalable Internetworking	3
TS 4389	Network Security	3
TS 4390	Seminar in Telecommunications	3
TS 4391	Seminar in Information and Communication Technology	3
TS 4400-99	Selected Topics	3

Group 2: Student must select at least 2 courses.

IT 3210	Database Management Systems	3
IT 3230	Management Information System	3
IT 3351	Web Design and Development I	3
SC 2220	Computer Organization	3
SC 3211	Operating Systems	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
DA 1121	Basic Mathematics and Statistics	3
IT 2231	Introduction to Information Technology	3
MGT 1101	Introduction to Business	3
TS 1201	Physics	4
	Total	***16***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
ACT 1602	Fundamentals of Financial Accounting I	3
DA 2103	Principles of Statistics	3
DA 2101	Calculus I	3
GE 2101	World Civilization	3
SC 1101	Computer Programming I	4
	Total	***19***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
IT 2130	Systems Science	3
IT 2172	Programming Workshop	4
TS 3230	Telecommunications System and Technology	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
GE 2202	Ethics	3
TS 2222	Introduction to Circuits and Electronics	4
TS 2231	Mathematics for Telecommunications	3
TS 3256	Computer Networks and Open Systems	4
	Total	***17***





Third Year
First Semester

Course Code	Course Title	Credits
MGT 2900	Principles of Management	3
TS 2242	Communication Signal and Systems	4
TS 3257	Coding for Communications	3
TS 4261	Internetworking Workshop I	4
	One Major Elective Course	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
TS 3254	Digital Communications	4
TS 4262	Internetworking Workshop II	4
TS 4255	Wireless Communication Systems	4
	Two Major Elective Courses	6
	Total	***18***

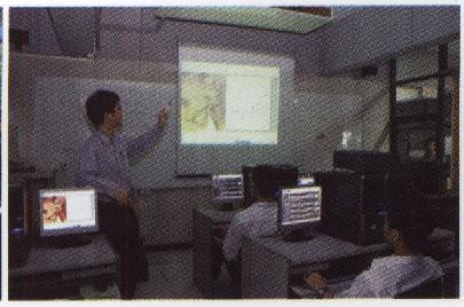
Fourth Year
First Semester

Course Code	Course Title	Credits
MT 4201	Social Interest, Government Policy and Technology	3
TS 4299	Senior Project	3
	Three Major Elective Courses	9
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
LA 4606	Intellectual Property Law	3
	Four Major Elective Courses	12
	One Free Elective Course	3
	Total	***18***




DEPARTMENT OF BUSINESS DATA ANALYSIS

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:
The program is designed to produce graduates who:

- Have morals and ethics.
- Understand and responsible for the impacts and consequences of technology towards society and the environment.
- Have the knowledge and understanding of the major principles and theories of data analysis.
- Able to manage and develop data analysis systems.
- Capable of applying new techniques in data analysis.
- Possess systematical, logical and critical thinking skills.
- Able to provide advice and coordinate the services needed by executives in both internal and external units of organizations.
- Able to provide solutions related to data analysis systems in the dynamic environment.
- Able to work with a team and be a leader or a follower.
- Have responsibility in the assigned tasks and continuously have self-development in the field of data analysis.
- Able to communicate effectively in listening, speaking, reading and writing both in Thai and English.

COURSES

A. General Education Courses **30 credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT1101	Introduction to Business	3

Humanities Course ***3 credits***

GE 2101	World Civilization	3

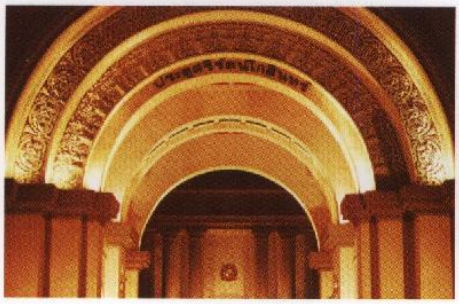
Science and Mathematics Courses ***9 credits***

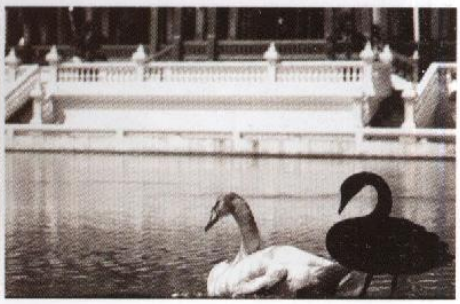
DA 1121	Basic Mathematics and Statistics	3
DA 2103	Principles of Statistics	3
MT 4201	Social Interests, Government Policies and Technology	3

B. Specialized Courses **104 credits**

Basic Courses ***41 credits***

ACT 1602	Fundamentals of Financial Accounting I	3
DA 2101	Calculus I	3
DA 2102	Calculus II	3
DA 2201	Linear Algebra	3
DA 2203	Probability and Statistical Methods	3
DA 2204	Statistical Packages	3
IT 2130	Systems Science	3
IT 2231	Introduction to Information Technology	3
LA 4606	Intellectual Property Law	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3
SC 1101	Computer Programming I	4
TS 1201	Physics	4



Major Required Courses ***30 credits***

DA 3201	Statistical Inferences and Theory of Probability	3
DA 3202	Database Systems & Data- Warehouse Concepts	3
DA 3301	Principles of Data Collection Methods	3
DA 3302	Qualitative Research for Business and Applications	3
DA 3303	Quantitative Research for Business and Applications	3
DA 3304	Intelligence Systems	3
DA 3305	Data Mining Methods	3
DA 3306	Statistical Forecasting Techniques I	3
DA 3401	Multivariate Methods	3
DA 4299	Senior Project	3

Specialized Required Courses ***18 credits***

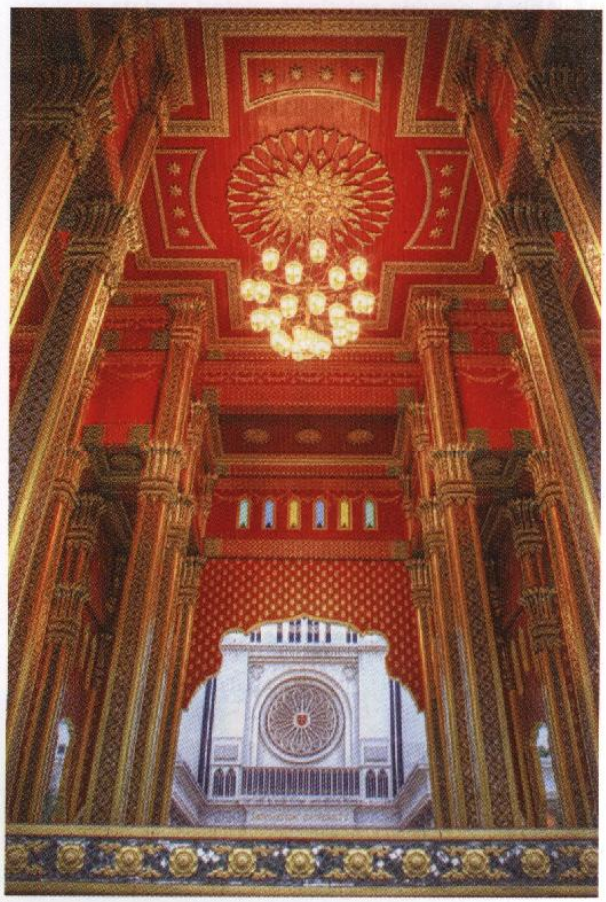
BG 2403	Introduction to Economics	3
FIN 2700	Money, Banking and Financial Markets	3
MGT 2404	Managerial Psychology	3
MKT 3102	Integrated Marketing Communications	3
MKT 3530	Consumer Behavior	3
MKT 4730	Marketing Management	3

Major Elective Courses ***15 credits***

DA 3203	Nonparametric Methods	3
DA 3402	Data Analysis	3
DA 4301	Operation Research I	3
DA 4302	Operation Research II	3
DA 4303	Counselor Workshop	3
DA 4304	Customer Relationship Management and E-Business	3
DA 4310	Statistical Forecasting Techniques II	3
DA 4311	Statistics for Quality Control	3
DA 4319	Introduction to Simulation	3
DA 4321	Applied Statistics fro Decision Making	3
DA 4380	Selected Topics in Business Data Analysis	3
DA 4390	Seminar in Business Data Analysis	3

C. Free Elective Courses **6 credits**

Students can take free elective courses of 6 credits which are offered by faculty or by any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
DA 1121	Basic Mathematics and Statistics	3
IT 2231	Introduction to Information Technology	3
MGT 1101	Introduction to Business	3
TS 1201	Physics	4
	Total	***16***

Second Semester

Course Code	Course Title	Credits
ACT 1602	Fundamentals of Financial Accounting I	3
BG 1002	English II	3
DA 2101	Calculus I	3
DA 2103	Principles of Statistics	3
GE 2101	World Civilization	3
SC 1101	Computer Programming I	4
	Total	***19***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
DA 2204	Statistical Packages	3
MGT 2404	Managerial Psychology	3
MGT 2900	Principles of Management	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BG 2403	Introduction to Economics	3
DA 2201	Linear Algebra	3
DA 3201	Statistical Inferences and Theory of Probability	3
DA 3202	Database Systems & Data-Warehouse Concepts	3
IT 2130	Systems Science	3
	Total	***18***







THIRD YEAR

First Semester

Course Code	Course Title	Credits
DA 3301	Principles of Data Collection Methods	3
DA 3304	Intelligence Systems	3
DA 3306	Statistical Forecasting Techniques I	3
FIN 2700	Money, Banking and Financial Markets	3
MKT 2280	Principles of Marketing	3
	One Major Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
DA 3302	Qualitative Research for Business and Applications	3
DA 3305	Data Mining Methods	3
DA 3401	Multivariate Methods	3
MKT 3102	Integrated Marketing Communications	3
MKT 3530	Consumer Behavior	3
	One Major Elective Course	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
DA 3303	Quantitative Research for Business and Applications	3
GE 2202	Ethics	3
LA 4606	Intellectual Property Law	3
MKT 4730	Marketing Management	3
	One Major Elective Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
DA 4299	Senior Project	3
MT 4201	Social Interests, Government Policies and Technology	3
	One Major Elective Course	3
	One Major Elective Course	3
	One Free Elective Course	3
	Total	***15***





DEPARTMENT OF TECHNOLOGY MANAGEMENT

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:
The program is designed to produce graduates who:

- Have morals and ethics.
- Understand and responsible for the impacts and consequences of technology towards society and the environment.
- Have the knowledge and understanding of the major principles and theories of technology management.
- Able to manage and develop technology, and use innovation and business.
- Capable of applying innovation in today creative economy and modern management model.
- Possess systematical, logical and critical thinking skills.
- Able to perform business analysis and apply problem solving skills in effective and constructive manner.
- Able to provide solutions related to technology management in the dynamic environment.
- Able to work with a team and be a leader or a follower.
- Have responsibility and accountability in the assigned tasks and continuously have self-development in the field of technology management.
- Able to communicate effectively in listening, speaking, reading and writing both in Thai and English.

COURSES

A. General Education Courses **30 credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Course ***3 credits***

GE 2101	World Civilization	3

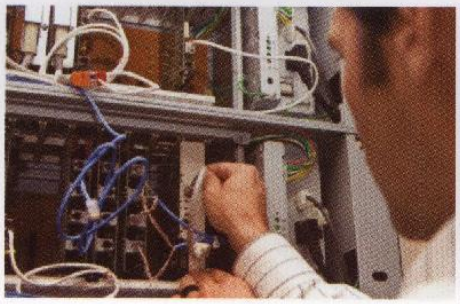
Science and Mathematics Courses ***9 credits***

DA 1121	Basic Mathematics and Statistics	3
DA 2103	Principles of Statistics	3
MT 4201	Social Interests, Government Policies and Technology	3

B. Specialized Courses **105 credits**

Basic Courses ***44 credits***

ACT 1602	Fundamentals of Financial Accounting I	3
ACT 1603	Fundamentals of Financial Accounting II	3
DA 2101	Calculus I	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Method	3
IT 2130	Systems Science	3
IT 2231	Introduction to Information Technology	3
LA 4606	Intellectual Property Law	3
MT 2101	Principles of Technology Management	3
MT 2102	General Engineering System	3
MT 2103	Introduction to Innovation Business	3
SC 1101	Computer Programming I	4
SC 4333	System Analysis and Design	3
TS 1201	Physics	4





Major Required Courses ***30 credits***

IT 3230	Management Information Systems	3
MT 2210	Fundamentals of Financial Management in Technology Development	3
MT 3211	Organization Behavior in Technology Driven Enterprises	3
MT 3212	Economics for Sciences and Technology Policy	3
MT 3220	Technological Marketing Management	3
MT 3221	Fundamentals of Communication Technology	3
MT 3230	Production and Project Management	3
MT 3340	Principles of Business Research	3
MT 4210	Technology Management and Business Strategy	3
MT 4299	Senior Project	3

Major Elective Courses ***30 credits***

Major Elective courses are divided into two Groups. Students are required to select courses according to the following conditions:

Management Group: Students are required to select at least 5 courses (15 credits).

MT 3210	Human Resources in Technology Driven Enterprises	3
MT 3240	Work Analysis and Operation Designs	3
MT 3310	Global Business and Intellectual Property	3
MT 3311	Leadership and Managerial Skill Development	3
MT 3312	Quality Management	3
MT 3313	Technical Communications	3
MT 3314	Introduction to Supply Chain Management	3
MT 3315	Consumer Behavior in Technology Business	3
MT 3316	Customer Relationship Management in Technology Business	3
MT 3317	Introduction to Industrial Marketing	3
MT 3318	Technology Retail Business	3
MT 3319	Consumer Technology Product and Merchandise Management	3
MT 3320	Organizational Development in Technology Enterprise	3
MT 3321	Global Innovation and Technological Changes	3
MT 3322	Innovation Business	3
MT 4310	International Marketing Management	3
MT 4311	Technological Brand Management	3
MT 4313	Management of Organization Transformation	3
MT 4314	Marketing Communication for Technology Product	3
MT 4315	Mobile Marketing and Technology	3
MT 4316	Financial Planning and Analysis	3
MT 4317	Business Budgeting and Control	3
MT 4318	Engineering Economics	3
MT 4319	Economics and Technology Development	3
MT 4320	Principles and Policies of Technology Investment	3
MT 4321	Product Design and Technology	3
MT 4322	Management of Technological Changes	3
MT 4323	Entrepreneurship in Technology Business	3





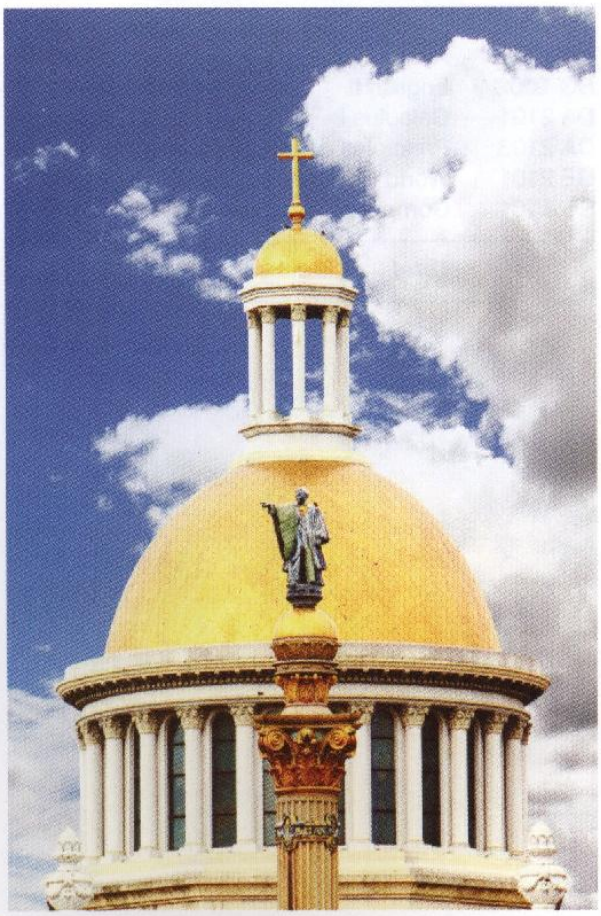
MT 4330	Operation System and Technology	3
MT 4390	Seminar in Management	3
MT 4400-99	Selected Topic in Management	3

Technical Group: Students are required to select at least 4 courses (12 credits).

DA 3202	Databases System and Data Warehouse Concepts	3
DA 3302	Qualitative Research for Business and Application	3
DA 3303	Quantitative Research for Business and Application	3
DA 3305	Data Mining Methods	3
DA 4304	Customer Relationship Management and E-Business	3
IT 2210	File Structure and Processing	3
IT 2220	Computer System Concepts	3
IT 2230	Information Structures	3
IT 3210	Database Management Systems	3
IT 3211	Information Storage and Retrieval	3
IT 3351	Web Design and Development I	3
IT 4311	Introduction to Computer Graphics	3
IT 4316	Image Processing	3
IT 4340	Introduction to Information Resource Management	3
IT 4357	Human Computer Interaction	3
IT 4359	E-Commerce	3
IT 4360	Multimedia Applications	3
MT 4360	Computer Graphic and Application	3
MT 4361	Computer Arts and Graphic Design	3
MT 4362	Web Design and Web Multimedia	3
MT 4363	Security Management in Information Technology	3
MT 4364	Marketing Information System and Management	3
MT 4365	Business Marketing Information System	3
MT 4366	Logistic Technology and Operation	3
MT 4367	Principles of Enterprise Knowledge Management	3
MT 4368	Technology Outsourcing	3
MT 4369	Technology Value Evaluation Methodology	3
MT 4370	Engineering Statistics	3
MT 4371	Advanced Statistics for Research	3
MT 4391	Seminar in Technology	3
MT 4450-99	Selected Topic in Technology	3
SC 2220	Computer Organization	3

C. Free Elective Courses 6 credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites. (if any).







STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
DA 1121	Basic Mathematics and Statistics	3
IT 2231	Introduction to Information Technology	3
MGT 1101	Introduction to Business	3
TS 1201	Physics	4
	Total	***16***

Second Semester

Course Code	Course Title	Credits
ACT1602	Fundamentals of Financial Accounting I	3
BG 1002	English II	3
DA 2101	Calculus I	3
DA 2103	Principles of Statistics	3
GE 2101	World Civilization	3
SC 1101	Computer Programming I	4
	Total	***19***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
ACT1603	Fundamentals of Financial Accounting II	3
BG 2000	English III	3
DA 2102	Calculus II	3
DA 2203	Probability and Statistical Methods	3
MT 2102	General Engineering System	3
MT 2103	Introduction to Innovation Business	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
IT 2130	Systems Science	3
MT 2101	Principles of Technology Management	3
MT 2210	Fundamentals of Financial Management in Technology Development	3
MT 3211	Organization Behavior in Technology Driven Enterprises	3
MT 3220	Technological Marketing Management	3
	Total	***18***





THIRD YEAR
First Semester

Course Code	Course Title	Credits
IT 3230	Management Information System	3
MT 3212	Economics for Sciences and Technology Policy	3
MT 3221	Fundamentals of Communication Technology	3
MT 3230	Production and Project Management	3
SC 4333	System Analysis and Design	3
	One Major Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
LA 4606	Intellectual Property Law	3
MT3340	Principles of Business Research	3
	Three Major Elective Courses	9
	Total	***18***

FOURTH YEAR
First Semester

Course Code	Course Title	Credits
MT 4201	Social Interests, Government Policies and Technology	3
MT 4210	Technology Management and Business Strategy	3
MT 4299	Senior Project	3
	Two Major Elective Courses	6
	One Free Elective Course	3
	Total	***18***

Second Semester

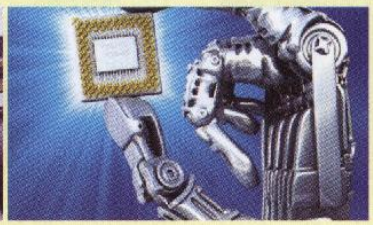
Course Code	Course Title	Credits
	Four Major Elective Courses	12
	One Free Elective Course	3
	Total	***15***

SCHOOL OF ENGINEERING

Curriculum Structure

Courses	Computer Engineering	Electrical and Electronic Engineering	Telecommunication and Electronic Engineering	Mechatronics Engineering
A. General Education Courses	30	34	34	34
- Language Courses	12	12	12	12
- Social Science Courses	6	6	6	6
- Humanities Courses	3	3	3	3
- Science and Mathematics Courses	9	13	13	13
B. Specialized Courses	110	105	107	106
- Basic Engineering Courses	20	20	20	20
- Core Courses	11	21	20	21
- Major Required Courses	70	58	61	59
- Major Elective Courses	9	6	6	6
C. Free Electives Courses	6	6	6	6
Total Credits	***146***	***145***	***147***	***146***





GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Engineering upon students who meet all the requirements as follows:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline



DEPARTMENT OF COMPUTER ENGINEERING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

1. Have moral and professional ethics.
2. Have knowledge in Computer Engineering and able to apply knowledge.
3. Capable of conducting research in both theoretical and practical aspects.
4. Have good personality, good social manners and able to appropriately work with people at all levels.
5. Have strong mathematical, computational and information technology skills.

COURSES

A. General Education Courses **30 Credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***3 credits***

GE 2101	World Civilization	3

Science and Mathematics Courses ***9 credits***

BG 1221	Computer Programming	3
BG 2208	Discrete Mathematics	3
GE 1301	Environmental Science	3

B. Specialized Courses **110 Credits**

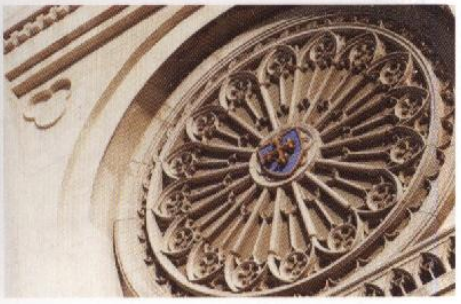
Basic Engineering Courses ***20 credits***

BG 1204	Calculus I	3
BG 1205	Calculus II	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2207	Engineering Mathematics	3
BG 2209	Statistics for Engineers	3

Core Courses ***11 credits***

EE 2203	Signals and Systems	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
ME 2211	Engineering Mechanics I	3





Major Required Courses for All Majors ***58 credits***

CE 2102	Data Structure and Algorithms	3
CE 2703	Introduction to Computer Systems	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
CE 2709	Computer Architecture	3
CE 3001	Commercial Application Programming	3
CE 3103	Computer Operating Systems	3
CE 3104	Software Engineering	3
CE 3108	Database Management Systems	3
CE 3111	Design and Analysis of Algorithms	3
CE 4207	System and Network Programming	3
CE 4221	Network Applications and Technology	3
CE 4224	Telecommunication Networks Laboratory	1
CE 4225	Computer and Network Security	3
CE 4228	Data Communication and Networking	3
CE 4901	Computer and Network Engineering Project I	1
CE 4902	Computer and Network Engineering Project II	2
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
EE 3703	Microprocessors	3
TE 3000	Principles of Communications	3

Major Required Courses for Computer Systems ***12 credits***

CE 3105	Microprocessor Programming Using Assembly & C	3
CE 3106	Programming Languages	3
CE 3707	Microprocessor Systems Design	3
CE 3708	Microprocessor Systems Design Laboratory	1
CE 4001	Software Development Laboratory	1
CE 4711	Microcomputer Interfacing Laboratory	1

Major Required Courses for Network Technology ***12 credits***

CE 3901	Digital Audio/Video Coding Technique	3
CE 4223	Advanced Computer Networks	3
CE 4226	Network Systems Analysis and Design	3
CE 4227	Mobile and Wireless Networks	3

Major Required Courses for Broadcast and New Media ***12 credits***

CA 2007	Introduction to New Media and Broadcasting	3
CE 3901	Digital Audio/Video Coding Technique	3
CE 4002	Introduction to Broadcasting Technology	3
CE 4201	Image Processing and Computer Vision	3

Major Elective Courses **9 credits**

AD 3114	Interactive Advertising and Marketing Communication	3
CE 4106	Object-Orient Programming	3
CE 4108	Operations Research	3
CE 4109	Information Systems Analysis and Design	3
CE 4110	Compilers	3
CE 4114	Data Mining	3
CE 4713	Advanced Computer Architecture	3
CE 4714	Fault-Tolerant Computer	3
CE 4715	Artificial Intelligence	3
CE 4903	Advanced Topics in Computer Engineering	3
CE 4904	Special Problems in Computer Engineering	3
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
EE 3301	Electromagnetic Fields	3
EE 3406	Control Systems	3
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 3704	Embedded Systems	3
EE 4305	Digital Signal Processing	3
EE 4403	Basic Mechatronics	3





EE 4503	Electrical Systems Design	3
EE 4602	Industrial Instrumentation and Control	3
IE 4201	Engineering Management	3
IE 4202	Engineering Economics	3
MCE 4801	Instrument for Aviation	6
NM 3410	New Media Application	3
NM 4405	Broadcast and New Media Management	3
NM 4413	Advance Multimedia Editing	3
TE 4107	Digital Telephony	3
TE 4112	Optical Communications	3
TE 4201	Communication Electronics	3
TE 4202	Communication Electronics Laboratory	1
TE 4204	Optoelectronics	3
TS 4261	Internetworking Workshop I	4
TS 4262	Internetworking Workshop II	4

Students can also select major required courses of other majors as their major elective courses.

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1204	Calculus I	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1221	Computer Programming	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1205	Calculus II	3
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2208	Discrete Mathematics	3
CE 2102	Data Structure and Algorithms	3
CE 2703	Introduction to Computer Systems	3
	Total	***19***





Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2207	Engineering Mathematics	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
ME 2211	Engineering Mechanics I	3
GE 2101	World Civilization	3
	Total	***20***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BG 2209	Statistics for Engineers	3
EE 2203	Signals and systems	3
EE 2605	Electronic Circuit Analysis	3
EE 2606	Electronic Circuit Analysis Laboratory	1
GE 1301	Environmental Science	3
	Total	***16***

Third Year
First Semester

Course Code	Course Title	Credits
CE 2709	Computer Architecture	3
CE 3103	Computer Operating Systems	3
CE 3108	Database Management Systems	3
CE 4228	Data Communication and Networking	3
EE 3703	Microprocessors	3
TE 3000	Principles of Communications	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CE 3104	Software Engineering	3
CE 3111	Design and Analysis of Algorithms	3
CE 4207	System and Network Programming	3
CE 4221	Network Applications and Technology	3

Computer Systems Major

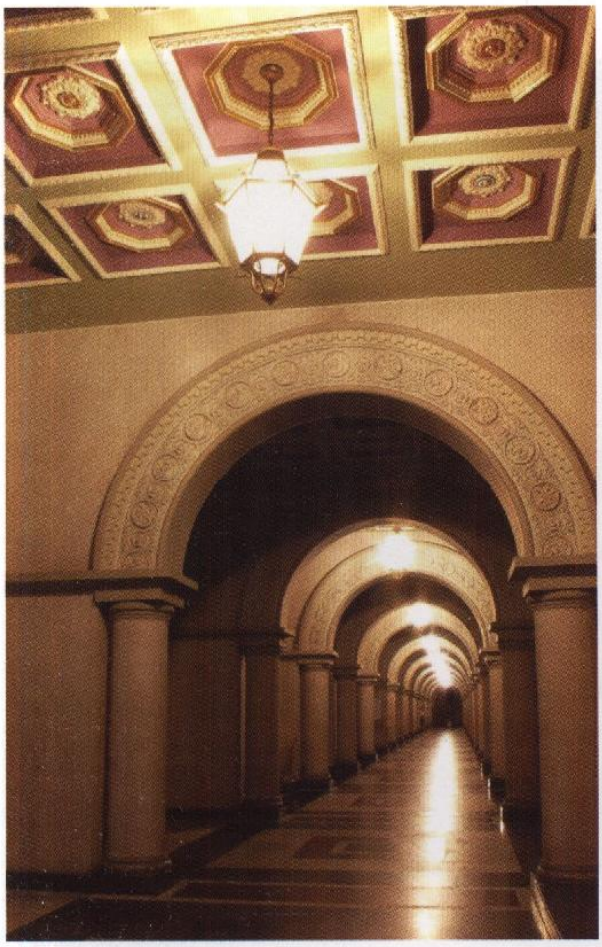
CE 3105	Microprocessor Programming Using Assembly & C	3
CE 3707	Microprocessor Systems Design	3
CE 3708	Microprocessor Systems Design Laboratory	1
	Total	***19***

OR Network Technology Major

CE 3901	Digital Audio/Video Coding Technique	3
CE 4223	Advanced Computer Networks	3
	Total	***18***

OR Broadcast and New Media Major

CA 2007	Introduction to New Media and Broadcasting	3
CE 4002	Introduction to Broadcasting Technology	3
	Total	***18***



Fourth Year

First Semester

Course Code	Course Title	Credits
CE 3001	Application Programming	3
CE 4224	Telecommunication Networks Laboratory	1
CE 4225	Computer and Network Security	3
CE 4901	Computer Engineering Project I	1
	One Major Elective Course	3
	One Free Elective Course	3

Computer Systems Major

CE 3106	Programming Languages	3
CE 4711	Microcomputer Interfacing Laboratory	1
	One Major Elective Course	3
	Total	***18***

OR Network Technology Major

CE 4226	Network Systems Analysis and Design	3
	One Major Elective Course	3
	Total	***17***

OR Broadcast and New Media Major

	One Major Elective Course	3
	Total	***17***

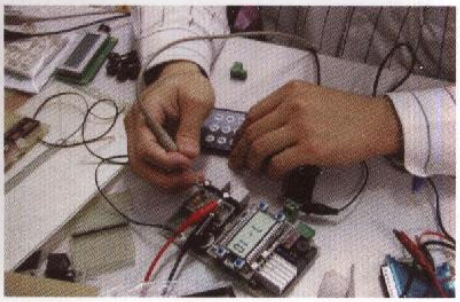
Second Semester

Course Code	Course Title	Credits
CE 4902	Computer and Network Engineering Project II	2
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3
	One Free Elective Course	3

Computer Systems Major

CE 4001	Software Development Laboratory	1
	One Major Elective Course	3
	One Major Elective Course	3
	Total	***18***





OR Network Technology Major

CE 4227	Mobile and Wireless Networks	3
	One Major Elective Course	3
	Total	***17***

OR Broadcast and New Media Major

CE 3901	Digital Audio/video Coding Technique	3
CE 4201	Image Processing and Computer Vision	3
	Total	***17***







DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have moral and professional ethics.
- Have knowledge in electrical engineering and able to apply knowledge in the administration of building electrical systems, high-voltage systems, illumination systems, industrial electrical systems, and safety in electrical systems.
- Capable of conducting research in both theoretical and practical aspects.
- Have good personality, good social manners and able to appropriately work with people of all levels.
- Have strong mathematical, computational and information technology skills.

COURSES

A. General Education Courses **34 Credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***3 credits***

GE 2101	World Civilization	3

Science and Mathematics Courses 13 credits

BG 0008	General Chemistry Laboratory	1
BG 1108	General Chemistry	3
BG 1221	Computer Programming	3
BG 2208	Discrete Mathematics	3
GE 1301	Environmental Science	3

B. Specialized Courses **105 Credits**

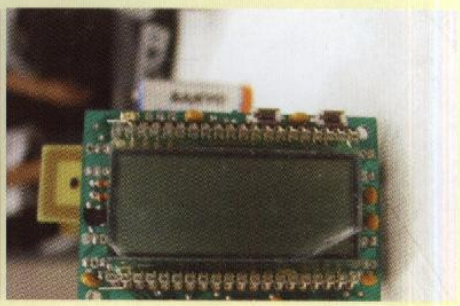
Basic Engineering Courses ***20 credits***

BG 1204	Calculus I	3
BG 1205	Calculus II	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2207	Engineering Mathematics	3
BG 2209	Statistics for Engineers	3

Core Courses ***21 credits***

CE 3105	Microprocessor Programming Using Assembly & C	3
EE 3301	Electromagnetic Fields	3
IE 1110	Engineering Materials	2
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
ME 2211	Engineering Mechanics I	3





TE 3000	Principles of Communications	3
TE 3002	Communications Laboratory	1

Major Required Courses ***58 credits***

CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2203	Signals and system	3
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
EE 3402	Electrical Machines	3
EE 3403	Electrical Machines Laboratory	1
EE 3406	Control Systems	3
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 3606	Electrical Instruments and Measurements	3
EE 3703	Microprocessors	3
EE 4501	Power System Analysis	3
EE 4503	Electrical Systems Design	3
EE 4505	Power System Protection	3
EE 4506	High Voltage Engineering	3
EE 4508	Power Plant and Substations	3
EE 4705	Power Electronics	3
EE 4706	Power Electronics Laboratory	1
EE 4901	Electrical and Electronic Engineering Project I	1
EE 4902	Electrical and Electronic Engineering Project II	2

Major Elective Courses ***6 credits***

Students can take major elective courses of 6 credits from the following courses.

BG 4000	Advanced Engineering Mathematics	3
CE 3001	Commercial Application	3
CE 4223	Advanced Computer Networks	3
CE 4224	Telecommunication Networks Laboratory	3
CE 4228	Data Communication and Networking	3
EE 3704	Embedded Systems	3
EE 4201	Network Theory	3
EE 4301	Introduction to Electromagnetic Compatibility	3
EE 4305	Digital Signal Processing	3
EE 4401	Electric Drive	3
EE 4402	Analysis and Design of Electrical Machines	3
EE 4403	Basic Mechatronics	3
EE 4504	Illumination Engineering	3
EE 4600	IC Technology	3
EE 4601	Industrial Electronics	3
EE 4602	Industrial Instrumentation and Control	3
EE 4701	Microprocessor Interface Techniques	3
EE 4903	Advanced Topics in Electrical and/or Electronic Engineering	3
EE 4904	Special Problems in Electrical and/orElectronic Engineering	3
IE 4201	Engineering Management	3
IE 4202	Engineering Economy	3
MCE 4801	Instrument for Aviation	6
ME 3310	Thermofluids	3
TE 3102	Communication Networks and Transmission Lines	3
TE 4107	Digital Telephony	3
TE 4112	Optical Communications	3
TE 4201	Communication Electronics	3
TE 4202	Communication Electronics Laboratory	1
TE 4204	Optoelectronics	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1204	Calculus I	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1221	Computer Programming	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 0008	General Chemistry Laboratory	1
BG 1002	English II	3
BG 1108	General Chemistry	3
BG 1205	Calculus II	3
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2208	Discrete Mathematics	3
IE 1110	Engineering Materials	3
	Total	***20***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2207	Engineering Mathematics	3
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
ME 2211	Engineering Mechanics I	3
MGT 1101	Introduction to Business	3
	Total	***20***

Second Semester

Course Code	Course Title	Credits
GE 1301	Environmental Science	3
BG 2001	English IV	3
BG 2209	Statistics for Engineers	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2203	Signals and systems	3
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
	Total	***20***





Third Year
First Semester

Course Code	Course Title	Credits
CE 3105	Microprocessor Programming Using Assembly & C	3
EE 3402	Electrical Machines	3
EE 3403	Electrical Machines Laboratory	1
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 3606	Electrical Instruments and Measurements	3
GE 2101	World Civilization	3
	Total	***17***

Second Semester

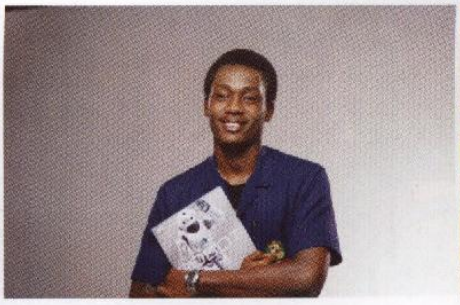
Course Code	Course Title	Credits
GE 2202	Ethics	3
EE 3301	Electromagnetic Fields	3
EE 3406	Control Systems	3
EE 3703	Microprocessors	3
TE 3000	Principles of Communications	3
TE 3002	Communications Laboratory	1
	One Major Elective Course	3
	Total	***19***

Fourth Year
First Semester

Course Code	Course Title	Credits
EE 4501	Power System Analysis	3
EE 4503	Electrical Systems Design	3
EE 4506	High Voltage Engineering	3
EE 4901	Electrical and Electronic Engineering Project I	1
	One Major Elective Course	3
	One Free Elective Course	3
	Total	***16***

Second Semester

Course Code	Course Title	Credits
EE 4505	Power System Protection	3
EE 4508	Power Plant and Substations	3
EE 4705	Power Electronics	3
EE 4706	Power Electronics Laboratory	1
EE 4902	Electrical and Electronic Engineering Project II	2
	One Free Elective Course	3
	Total	***15***


DEPARTMENT OF MECHATRONICS ENGINEERING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

1. Have moral and professional ethics.
2. Have knowledge in Mechatronics Engineering and able to apply knowledge.
3. Capable of conducting research in both theoretical and practical aspects.
4. Have good personality, good social manners and able to appropriately work with people at all levels.
5. Have strong mathematical, computational and information technology skills.

COURSES

A. General Education Courses **34 Credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***3 credits***

GS 2101	World Civilization	3

Science and Mathematics Courses 13 credits

BG 0008	General Chemistry Laboratory	1
BG 1108	General Chemistry	3
BG 1221	Computer Programming	3
BG 2208	Discrete Mathematics	3
GE 1301	Environmental Science	3

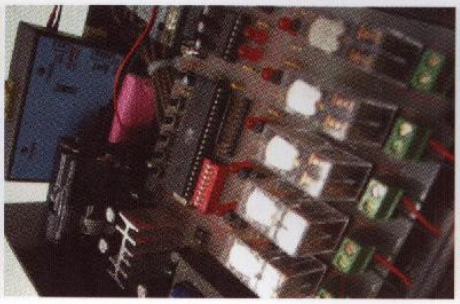
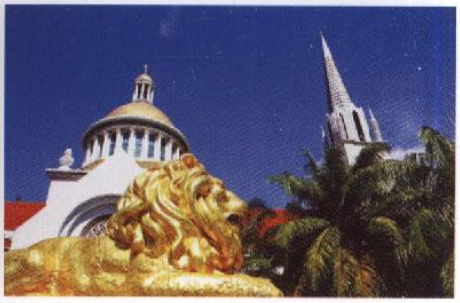
B. Specialized Courses **106 Credits**

Basic Engineering Courses ***20 credits***

BG 1204	Calculus I	3
BG 1205	Calculus II	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2207	Engineering Mathematics	3
BG 2209	Statistics for Engineers	3

Core Courses ***21 credits***

EE 2203	Signals and Systems	3
EE 3402	Electrical Machines	3
EE 3403	Electrical Machines Laboratory	1
IE 1110	Engineering Materials	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
ME 2211	Engineering Mechanics I	3
ME 2220	Engineering Mechanics II	3

Major Required Courses ***59 credits***

CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
CE 4201	Image Processing and Computer Vision	3
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laborator	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
EE 3405	Digital Control Systems	3
EE 3406	Control Systems	3
EE 3703	Microprocessor	3
EE 4705	Power Electronics	3
EE 4706	Power Electronics Laboratory	1
IE 4100	Manufacturing Processes	3
MCE 2101	Fundamentals of Mechatronics Engineering	3
MCE 2102	Mechatronics Engineering Laboratory I	1
MCE 4101	Introduction to Robotics	3
MCE 4102	Introduction to Industrial Automation	3
MCE 4103	Mechatronics Engineering Laboratory II	1
MCE 4901	Mechatronics Engineering Project I	1
MCE 4902	Mechatronics Engineering Project II	2
ME 3110	Mechanics of Material	3
ME 3120	Mechanics of Machinery	3
ME 3311	Pneumatic and Hydraulic Systems	3
ME 3312	Pneumatic and Hydraulic Systems Laboratory	1

Major Elective Courses ***6 credits***

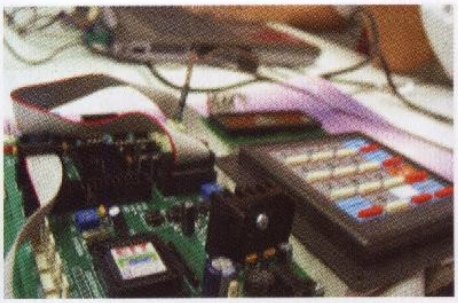
Students can take major elective courses of 6 credits from the following courses.

CE 3001	Commercial Application Programming	3
CE 4221	Network Applications and Technology	3
CE 4224	Telecommunication Network Laboratory	1
CE 4225	Computer and Network Security	3
EE 3301	Electromagnetic Fields	3
EE 3606	Electrical Instruments and Measurements	3
EE 3704	Embedded Systems	3
EE 4305	Digital Signal Processing	3
EE 4501	Power System Analysis	3
EE 4503	Electrical System Design	3
EE 4506	High Voltage Engineering	3
EE 4507	Power Plant Engineering	3
EE 4602	Industrial Instrumentation and Control	3
EE 4603	Industrial Electronics	3
EE 4701	Microprocessor Interface Techniques	3
IE 4101	Manufacturing and Information Technology	3
IE 4201	Engineering Management	3
IE 4202	Engineering Economics	3
MCE 4801	Instrument for Aviation	6
MCE 4903	Advanced Topics in Mechatronics Engineering	3
MCE 4904	Special Problems in Mechatronics Engineering	3
ME 4010	Machine Design	3
ME 4310	Mechanical Vibration	3
ME 4410	Thermodynamics	3
ME 4411	Heat Transfer	3
ME 4412	Internal Combustion Engines	3
TE 3000	Principles of Communications	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1204	Calculus I	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1221	Computer Programming	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
	Total	***18***

Second Semester

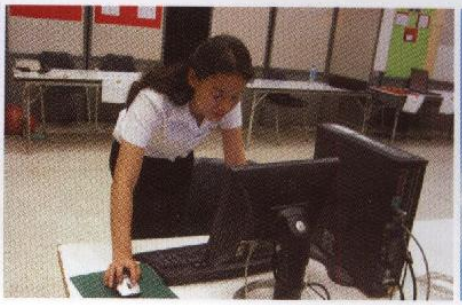
Course Code	Course Title	Credits
BG 0008	General Chemistry Laboratory	1
BG 1002	English II	3
BG 1108	General Chemistry	3
BG 1205	Calculus II	3
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2208	Discrete Mathematics	3
IE 1110	Engineering Materials	3
	Total	***20***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2209	Engineering Mathematics	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
MCE 2101	Fundamental of Mechatronics Engineering	3
MCE 2102	Fundamental of Mechatronics Engineering Laboratory I	1
ME 2211	Engineering Mechanics I	3
	Total	***21***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BG 2209	Statistics for Engineers	3
EE 2203	Signals and Systems	3
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
ME 2220	Engineering Mechanics II	3
	Total	***20***


Third Year
First Semester

Course Code	Course Title	Credits
EE 3402	Electrical Machines	3
EE 3403	Electrical Machines Laboratory	1
EE 3406	Control Systems	3
EE 3703	Microprocessor	3
ME 3110	Mechanics of Materials	3
ME 3120	Mechanics of Machinery	3
	Total	***16***

Second Semester

Course Code	Course Title	Credits
GE 1301	Environmental Science	3
GS 2101	World Civilization	3
CE 4201	Image Processing and Computer Vision	3
EE 3405	Digital Control Systems	3
ME 3311	Pneumatic and Hydraulic Systems	3
ME 3312	Pneumatic and Hydraulic Systems Laboratory	1
	One Free Elective Course	3
	Total	***19***

Fourth Year
First Semester

Course Code	Course Title	Credits
GE 2202	Ethics	3
MCE 4102	Introduction to Industrial Automation	3
MCE 4103	Mechatronics Engineering Laboratory II	1
MCE 4901	Mechatronics Engineering Project I	1
MGT 1101	Introduction to Business	3
	One Major Elective Course	3
	One Free Elective Course	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
EE 4705	Power Electronics	3
EE 4706	Power Electronics Laboratory	1
IE 4100	Manufacturing Processes	3
MCE 4101	Introduction to Robotics	3
MCE 4902	Mechatronics Engineering Project II	2
	One Major Elective Course	3
	Total	***15***





DEPARTMENT OF TELECOMMUNICATION AND ELECTRONIC ENGINEERING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

1. Have moral and professional ethics.
2. Have knowledge in Telecommunication and Electronic Engineering and able to apply knowledge and skills.
3. Capable of conducting research in both theoretical and practical aspects.
4. Have good personality, good social manners and able to appropriately work with people at all levels.
5. Have strong mathematical, computational and information technology skills.

COURSES

A. General Education Courses **34 Credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 credits***

GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***3 credits***

GE 2101	World Civilization	3

Science and Mathematics Courses 13 credits

BG 0008	General Chemistry Laboratory	1
BG 1108	General Chemistry	3
BG 1221	Computer Programming	3
BG 2208	Discrete Mathematics	3
GE 1301	Environmental Science	3

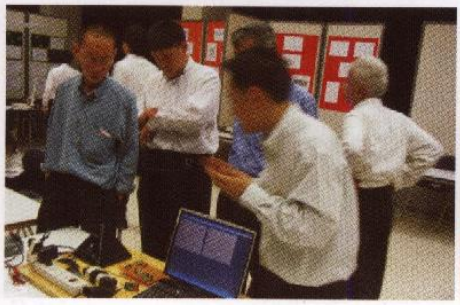
B. Specialized Courses **107 Credits**

Basic Engineering Courses ***20 credits***

BG 1204	Calculus I	3
BG 1205	Calculus II	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2207	Engineering Mathematics	3
BG 2209	Statistics for Engineers	3

Core Courses ***20 credits***

CE 4207	System and Network Programming	3
EE 3406	Control Systems	3
EE 4305	Digital Signal Processing	3
IE 1110	Engineering Materials	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
ME 2211	Engineering Mechanics I	3





Major Required Courses ***61 credits***

CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
CE 4224	Telecommunication Networks Laboratory	1
CE 4228	Data Communication and Networking	3
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2203	Signals and Systems	3
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
EE 3301	Electromagnetic Fields	3
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 3606	Electrical Instruments and Measurements	3
EE 3703	Microprocessors	3
TE 3000	Principles of Communications	3
TE 3002	Communications Laboratory	1
TE 3102	Communication Networks and Transmission Lines	3
TE 3301	Radio Wave Propagation	3
TE 4105	Microwave Engineering	3
TE 4108	Digital Communication	3
TE 4111	Antenna Engineering	3
TE 4112	Optical Communications	3
TE 4201	Communication Electronics	3
TE 4202	Communication Electronics Laboratory	1
TE 4901	Telecommunication and Electronic Engineering Project I	1
TE 4902	Telecommunication and Electronic Engineering Project II	2

Major Elective Courses ***6 credits***

Students can take major elective courses of 6 credits from the following courses.

BG 4000	Advanced Engineering Mathematics	3
CE 2102	Data Structure and Algorithms	3
CE 3001	Commercial Application Programming	3
CE 4221	Network Applications and Technology	3
CE 4223	Advanced Computer Networks	3
CE 4227	Mobile and Wireless Networks	3
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
EE 3704	Embedded Systems	3
EE 4503	Electrical Systems Design	3
IE 4201	Engineering Management	3
IE 4202	Engineering Economics	3
MCE 4801	Instrument for Aviation	3
TE 4107	Digital Telephony	3
TE 4110	Wireless Communications and Cellular Systems	3
TE 4203	Noise in Electronic Systems	3
TE 4204	Optoelectronics	3
TE 4903	Advanced Topics in Telecommunication and Electronic Engineering	3
TE 4904	Special Problems in Telecommunication and Electronic Engineering	3
TS 4261	Internetworking Workshop I	3
TS 4262	Internetworking Workshop II	3

Students can also select major required courses of other majors as their major elective courses.

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BG 1204	Calculus I	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1221	Computer Programming	3
ME 1112	Engineering Laboratory	2
ME 1113	Engineering Drawing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 0008	General Chemistry Laboratory	1
BG 1002	English II	3
BG 1108	General Chemistry	3
BG 1205	Calculus II	3
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2208	Discrete Mathematics	3
IE 1110	Engineering Materials	3
	Total	***20***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2207	Engineering Mathematics	3
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
ME 2211	Engineering Mechanics I	3
MGT 1101	Introduction to Business	3
	Total	***20***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BG 2209	Statistics for Engineers	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2203	Signals and systems	3
GE 1301	Environmental Science	3
GE 2101	World Civilization	3
	Total	***19***





Third Year
First Semester

Course Code	Course Title	Credits
EE 3301	Electromagnetic Fields	3
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 3606	Electrical Instruments and Measurements	3
EE 3703	Microprocessors	3
GE 2202	Ethics	3
	One Free Elective Course	3
	Total	***19***

Second Semester

Course Code	Course Title	Credits
CE 4207	System and Network Programming	3
EE 3406	Control Systems	3
TE 3000	Principles of Communications	3
TE 3002	Communications Laboratory	1
TE 3102	Communication Networks and Transmission Lines	3
TE 3301	Radio Wave Propagation	3
	One Free Elective Course	3
	Total	***19***

Fourth Year
First Semester

Course Code	Course Title	Credits
CE 4224	Telecommunication Networks Laboratory	1
CE 4228	Data Communication and Networking	3
EE 4305	Digital Signal Processing	3
TE 4105	Microwave Engineering	3
TE 4108	Digital Communication	3
TE 4901	Telecommunication and Electronic Engineering Project I	1
	One Major Elective Course	3
	Total	***17***

Second Semester

Course Code	Course Title	Credits
TE 4111	Antenna Engineering	3
TE 4112	Optical Communication	3
TE 4201	Communication Electronics	3
TE 4202	Communication Electronics Laboratory	1
TE 4902	Telecommunication and Electronic Engineering Project II	2
	One Major Elective Course	3
	Total	***15***



BACHELOR OF ENGINEERING PROGRAM IN
AERONAUTIC ENGINEERING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Be morally sound, committed to acting justly and open to further growth
- Have aeronautic knowledge both engineering and non-engineering
- Have aircraft maneuver skills
- Be open-minded with strong logical thinking problem-solving
- Have communication skills

Course	*Multi-Crew Pilot*	*Commercial Pilot*	*Aircraft Maintenance Engineer*
General Education Courses	**30**	**30**	**30**
Specialized Courses			
- Basic Engineering Courses	39	39	39
- Major Required Courses	66	55	63
- Major Elective Courses	6	17	9
Free Electives Courses	**6**	**6**	**6**
Total Credits	***147***	***147***	***147***

COURSES

A. General Education Courses **30 Credits**

Language Courses ***12 credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses **9 credits**

GE 1301	Environmental Science	3
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses **3 credits**

GE 2101	World Civilization	3

Science and Mathematics Courses **6 credits**

BG 1220	Fundamentals of Computer Processing	3
BG 2208	Discrete Mathematics	3

B. Specialized Courses ***111 Credits***

Basic Engineering Courses ***39 credits***

BG 1204	Calculus I	3
BG 1205	Calculus II	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2209	Statistics for Engineers	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
EE 2401	Electromechanical Energy Conversion	3
EE 2402	Electromechanical Energy Conversion Laboratory	1
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
ME 1113	Engineering Drawing	3
ME 2210	Engineering Mechanics	3





Major Required Courses
Students can select Multi-crew Pilot, or Commercial Pilot, or Aircraft Maintenance Engineer as their major.

Multi-crew Pilot ***66 credits***

AE 1100	Core Flying: Single-Engine Flight - Ground	3
AE 1200	Core Flying: Single-Engine Flight - Flight	2
AE 2100	Basic Flying: Single/Multi-Engine - Ground	3
AE 2200	Basic Flying: Single/Multi-Engine - Flight I	1
AE 2201	Basic Flying: Single/Multi-Engine - Flight II	1
AE 2202	Basic Flying: Multi-Engine Operations	2
AE 2203	Basic Flying: Operational Procedures	1
AE 2300	Basic Flying: Flight Communications	1
AE 2401	Basic Flying: Air Law	3
AE 3200	Intermediate Flying: Flight Simulator Training Device I	2
AE 3201	Intermediate Flying: Flight Simulator Training Device II	2
AE 3300	Intermediate Flying: Route Manual and Pilot Applications	3
AE 3301	Intermediate Flying: General Navigation	3
AE 3302	Intermediate Flying: Flight Performance and Planning I	3
AE 3303	Intermediate Flying: Flight Performance and Planning II	3
AE 3304	Intermediate Flying: Meteorology	3
AE 3400	Intermediate Flying: Advanced Aerodynamics	3
AE 3500	Intermediate Flying: Airframes and Aircraft Systems	3
AE 3501	Intermediate Flying: Power Plants and Instrumentations	3
AE 3502	Intermediate Flying: Radio Navigation	3
AE 3600	Advanced Flying: Multi-Engine Turbine - Ground	3
AE 3601	Advanced Flying: Multi-Engine Turbine - Flight	4
AE 3602	Advanced Flying: Specific Aircraft Flight - Ground	3
AE 3603	Advanced Flying: Specific Aircraft light – Flight	1
AE 3900	Seminar in International and Domestic Navigation	3
AE 4300	Intermediate Flying: Crew Resources Management and Flight Safety	1
AE 4301	Intermediate Flying: Human Performance and Limitations	3

Commercial Pilot ***55 credits***

AE 1100	Core Flying: Single-Engine Flight - Ground	3
AE 1200	Core Flying: Single-Engine Flight - Flight	2
AE 2100	Basic Flying: Single/Multi-Engine - Ground	3
AE 2200	Basic Flying: Single/Multi-Engine - Flight I	1
AE 2201	Basic Flying: Single/Multi-Engine - Flight II	1
AE 2202	Basic Flying: Multi-Engine Operations	2
AE 2203	Basic Flying: Operational Procedures	1
AE 2300	Basic Flying: Flight Communications	1
AE 2401	Basic Flying: Air Law	3
AE 3300	Intermediate Flying: Route Manual and Pilot Applications	3
AE 3301	Intermediate Flying: General Navigation	3
AE 3302	Intermediate Flying: Flight Performance and Planning I	3
AE 3303	Intermediate Flying: Flight Performance and Planning II	3
AE 3304	Intermediate Flying: Meteorology	3
AE 3400	Intermediate Flying: Advanced Aerodynamics	3
AE 3500	Intermediate Flying: Airframes and Aircraft Systems	3
AE 3501	Intermediate Flying: Power Plants and Instrumentations	3
AE 3502	Intermediate Flying: Radio Navigation	3
AE 3700	Commercial Flight I	1
AE 3701	Commercial Flight II	1
AE 3702	Commercial Flight III	1
AE 3703	Commercial Flight IV	1
AE 3900	Seminar in International and Domestic Navigation	3
AE 4300	Intermediate Flying: Crew Resources Management and Flight Safety	1
AE 4301	Intermediate Flying: Human Performance and Limitations	3





Aircraft Maintenance Engineer ***63 credits***

AE 1910	Problem-based Training in Aircraft Maintenance I	1
AE 1911	Problem-based Training in Aircraft Maintenance II	1
AE 1920	Problem-based Training in Aircraft Maintenance III	1
AE 2501	Maintenance English I	1
AE 2502	Maintenance English II	1
AE 2700	Fundamental Aircraft: Propulsion Theory	2
AE 2701	Fundamental Aircraft: Aircraft Engine	3
AE 2702	Fundamental Aircraft: Aerodynamics	2
AE 2703	Fundamental Aircraft: Aircraft Structure	3
AE 2704	Fundamental Aircraft: Aircraft Material	3
AE 2705	Fundamental Aircraft: Aircraft Performance	3
AE 2901	Fundamental Aircraft: Practical Verification	1
AE 3310	Aircraft Maintenance: Maintenance Human Factor	1
AE 3311	Aircraft System: Technical Document System	3
AE 3312	Aircraft System: Logistics	2
AE 3411	Aircraft System: Aviation Acts and Airworthiness Regulations	3
AE 3511	Aircraft System: Aircraft Communications	1
AE 3512	Aircraft System: Ground Support Equipment	2
AE 3513	Aircraft System: Non-Destructive Inspection	3
AE 3710	Aircraft Maintenance: Aircraft Maintenance I	3
AE 3711	Aircraft Maintenance: Aircraft Maintenance II	3
AE 3712	Aircraft System: Hydraulic and Pneumatic System	3
AE 3713	Aircraft System: Landing Gear and Brake System	3
AE 3714	Aircraft System: Fuel System	3
AE 3715	Aircraft System: Powerplant	3
AE 3716	Aircraft System: Stability and Weight & Balance System	3
AE 3800	Aircraft System: Aircraft Electrical System	3
AE 3901	Aircraft Maintenance: Practical Verification	1
AE 4901	Aircraft System: Practical Verification	1

Major Elective Courses

1. Students of all majors can select the following courses as major elective courses according to the number of required credits.

1 Multi-crew Pilot	6 credits
2 Commercial Pilot	17 credits
3 Aircraft Maintenance Engineer	9 credits

2. Students can also select major required courses of other majors as their major elective courses.

AE 2402	English for Aviation	3
AE 3401	Avionics	3
AE 4700	Commercial Pilot License Instructor	3
AE 4701	Commercial Pilot License Instructor: Fight I	2
AE 4702	Commercial Pilot License Instructor: Flight II	2
AE 4904	Special Problems in Aeronautic Engineering I	3
AE 4905	Special Problems in Aeronautic Engineering II	2
AE 4906	Special Problems in Aeronautic Engineering III	1
AE 4930	Advanced Topics in Aeronautic Engineering I	3
AE 4931	Advanced Topics in Aeronautic Engineering II	2
AE 4932	Advanced Topics in Aeronautic Engineering III	1
CE 2703	Introduction to Computer Systems	3
CE 4227	Mobile and Wireless Networks	3
EE 3301	Electromagnetic Fields	3
EE 3404	Feedback Control Systems	3
EE 3601	Electronic Circuit Design	3
EE 3602	Electronic Circuit Design Laboratory	1
EE 4305	Digital Signal Processing	3
EE 4403	Basic Mechatronics	3
EE 4503	Electrical Systems Design	3
EE 4602	Industrial Instrumentation and Control	3
MCE 2101	Fundamentals of Mechatronics Engineering	3
MCE 2102	Fundamentals of Mechatronics Engineering Lab I	1
TE 4201	Communication Electronics	3
TE 4202	Communication Electronics Laboratory	1





C. Free Elective Courses *6 Credits*

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	credits
BG 1001	English I	3
BG 1204	Calculus I	3
BG 1211	Physics I	3
BG 1212	Physics Laboratory I	1
BG 1220	Fundamental of Computer Processing	3
ME 1113	Engineering Drawing	3
	Total	***16***

OR Aircraft Maintenance Engineer

AE 1910	Problem-based Training in Aircraft Maintenance I	1
	Total	***17***

Second Semester

Code	Subjects	credits
BG 1002	English II	3
BG 1205	Calculus II	3
BG 1213	Physics II	3
BG 1214	Physics Laboratory II	1
BG 2208	Discrete Mathematics	3

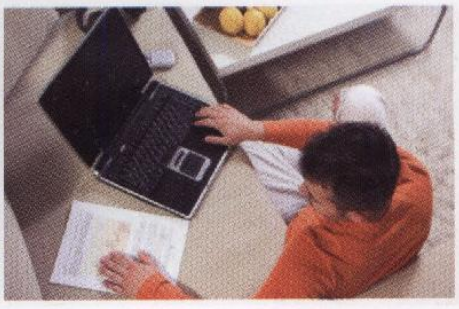
Multi-crew Pilot OR Commercial Pilot

AE 1100	Core Flying: Single-Engine Flight - Ground	3

OR Aircraft Maintenance Engineer

AE 1911	Problem-based Training in Aircraft Maintenance II	1
AE 2700	Fundamental Aircraft: PropulsionTheory	2
	Total	***16***





FIRST YEAR
Summer Session

Code	Subjects	credits
Multi-crew Pilot OR Commercial Pilot		
AE 1200	Core Flying: Single-Engine Flight - Flight	2
	Total	***2***

SECOND YEAR
First Semester

Code	Subjects	credits
BG 2000	English III	3
BG 2209	Statistics for Engineers	3
CE 2704	Digital Logic Design	3
CE 2705	Digital Logic Design Laboratory	1
EE 2201	Electric Circuits	3
EE 2202	Electric Circuits Laboratory	1
Multi-crew Pilot OR Commercial Pilot		
AE 2100	Basic Flying: Single/ Multi-Engine - Ground	3
AE 2200	Basic Flying: Single/ Multi-Engine - Flight I	1
AE 2300	Basic Flying: Flight Communications	1
	Total	***19***
OR Aircraft Maintenance Engineer		
AE 1920	Problem-based Training in Aircraft Maintenance III	1
AE 2701	Fundamental Aircraft: Aircraft Engine	3
	Total	***18***

Second Semester

Code	Subjects	credits
BG 2001	English IV	3
GE 2202	Ethics	3
ME 2210	Engineering Mechanics	3
EE 2605	Engineering Electronics	3
EE 2606	Engineering Electronics Laboratory	1
Multi-crew Pilot OR Commercial Pilot		
AE 2201	Basic Flying: Single/Multi-Engine - Flight II	1
AE 2202	Basic Flying: Multi-Engine Operations	2
AE 2203	Basic Flying: Operational Procedures	1
AE 2401	Basic Flying: Air Law	3
OR Aircraft Maintenance Engineer		
AE 2501	Maintenance English I	1
AE 2703	Fundamental Aircraft: Aircraft Structure	3
AE 2704	Fundamental Aircraft: Aircraft Material	3
	Total	***20***

THIRD YEAR
First Semester

Code	Subjects	credits
EE 2401	Electromechanical Energy Conversion	2
EE 2402	Electromechanical Energy Conversion Laboratory	1
MGT 1101	Introduction to Business	3
Multi-crew Pilot		
AE 3200	Intermediate Flying: Flight Simulator Training Device I	2
AE 3301	Intermediate Flying: General Navigation	3
AE 3302	Intermediate Flying: Flight Performance and Planning I	3
AE 3500	Intermediate Flying: Airframes and Aircraft Systems	3
	Major Elective Course (s)	2





OR Commercial Pilot

AE 3301	Intermediate Flying: General Navigation	3
AE 3302	Intermediate Flying: Flight Performance and Planning I	3
AE 3500	Intermediate Flying: Airframes and Aircraft Systems	3
AE 3700	Commercial Flight I	1
	Major Elective Course (s)	3

OR Aircraft Maintenance Engineer

AE 2502	Maintenance English II	1
AE 2702	Fundamental Aircraft: Aerodynamics	2
AE 2705	Fundamental Aircraft: Aircraft Performance	3
AE 3310	Aircraft Maintenance: Human Factor	1
AE 3710	Aircraft Maintenance: Aircraft Maintenance I	3
	Major Elective	3
	Total	***20***

Second Semester

Code	Subjects	credits

Multi-crew Pilot

AE 3201	Intermediate Flying: Flight Simulator Training Device II	2
AE 3300	Intermediate Flying: Route Manual and Pilot Applications	3
AE 3303	Intermediate Flying: Flight Performance and Planning II	3
AE 3400	Intermediate Flying: Advanced Aerodynamics	3
AE 3501	Intermediate Flying: Power Plants and Instrumentations	3
AE 3502	Intermediate Flying: Radio Navigation	3
	Free Elective Course (s)	3
	Total	***20***

OR Commercial Pilot

AE 3300	Intermediate Flying: Route Manual and Pilot Applications	3
AE 3303	Intermediate Flying: Flight Performance and Planning II	3
AE 3400	Intermediate Flying: Advanced Aerodynamics	3
AE 3501	Intermediate Flying: Power Plants and Instrumentations	3
AE 3502	Intermediate Flying: Radio Navigation	3
AE 3701	Commercial Flight II	1
	Major Elective Course (s)	3
	Total	***19***

OR Aircraft Maintenance Engineer

AE 2901	Fundamental Aircraft: Practical Verification	1
AE 3311	Aircraft System: Technical Document System	3
AE 3312	Aircraft System: Logistics	2
AE 3411	Aircraft System: Aviation Acts and Airworthiness Regulation	3
AE 3511	Aircraft System: Aircraft Communication	1
AE 3711	Aircraft Maintenance: Aircraft Maintenance II	3
AE 3712	Aircraft System: Hydraulic and Pneumatic System	3
AE 3713	Aircraft System: Landing Gear and Brake System	3
	Total	***19***

FOURTH YEAR

First Semester

Code	Subjects	credits
GE 2101	World Civilization	3

Multi-crew Pilot

AE 3304	Intermediate Flying: Meteorology	3
AE 3600	Advanced Flying: Multi-Engine Turbine - Ground	3
AE 3601	Advanced Flying: Multi-Engine Turbine – Flight	4
AE 4300	Intermediate Flying: Crew Resources Management and Flight Safety	1
AE 4301	Intermediate Flying: Human Performance and Limitations	3
	Total	***17***

OR Commercial Pilot

AE 3304	Intermediate Flying: Meteorology	3
AE 3702	Commercial Flight III	1





AE 4300	Intermediate Flying: Crew Resources Management and Flight Safety	1
AE 4301	Intermediate Flying: Human Performance and Limitations	3
	Major Elective Course (s)	6
	Total	***17***

OR Aircraft Maintenance Engineer

AE 3714	Aircraft System: Fuel System	3
AE 3715	Aircraft System: Powerplant	3
AE 3800	Aircraft System: Aircraft Electrical System	3
AE 3901	Aircraft Maintenance: Practical Verification	1
	Major Elective Course (s)	3
	Free Elective Course (s)	3
	Total	***19***

Second Semester

Code	Subjects	credits
GE 1301	Environmental Science	3

Multi-crew Pilot

AE 3602	Advanced Flying: Specific Aircraft Flight - Ground	3
AE 3603	Advanced Flying: Specific Aircraft Flight - Flight	1
AE 3900	Seminar in International and Domestic Navigation	3
	Major Elective Course (s)	4
	Free Elective Course (s)	3
	Total	***17***

OR Commercial Pilot

AE 3703	Commercial Flight IV	1
AE 3900	Seminar in International and Domestic Navigation	3
	Major Elective	5
	Free Elective	6
	Total	***18***

OR Aircraft Maintenance Engineer

AE 3512	Aircraft System: Ground Support Equipment	2
AE 3513	Aircraft System: Non-Destructive Inspection	3
AE 3716	Aircraft System: Stability and Weight & Balance System	3
AE 4901	Aircraft System: Practical Verification	1
	Major Elective	3
	Free Elective	3
	Total	***18***

ALBERT LAURENCE OF COMMUNICATION ARTS

Curriculum Structure

COURSES	AD	NM	PC	PR	VCD	CGI
A. General Education Courses	36	36	36	36	31	31
• Language Courses	15	15	15	15	12	12
• Social Science Courses	12	12	12	12	7	7
• Humanities Courses	3	3	3	3	9	9
• Science and Mathematics Courses	6	6	6	6	3	3
B. Specialized Courses	96	100	96	97	109	109
• Core Courses	39	39	39	39	45	45
• Major Required Courses	39	43	39	40	49	49
• Major Elective Courses	18	18	18	18	15	15
or - Minor Courses*	18	18	18	18		
C. Free Electives Courses	6	6	6	6	6	6
Total Credits	138	142	138	139	146	146





GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Communication Arts in Advertising upon students who meet all of the following requirements:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative grade point average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have participated in 8 sessions of the CA Seminar Series (Only for AD, NM, PC and PR)
- Have obtained library and financial clearance from the University
- Have demonstrated good behavior and discipline



DEPARTMENT OF ADVERTISING

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have morals, ethics, public consciousness, and social responsibility in accordance with professional code of ethics.
- Have well-grounded academic knowledge, skills, and practical experiences in the field of advertising, communication arts, management and business and able to work in the field of advertising business and communication in the society.
- Have the skill to analyze situations by appropriately applying their knowledge, reasoning, and judgment when they encounter situations in different social contexts, and cultures.
- Have a good personality with good social manners and able to appropriately work with people at all levels.
- Able to continuously develop themselves academically and professionally.
- Have knowledge and ability to use basic mathematics to interpret data and analyze information for planning, management, and development.
- Make efficient use of information technology and foreign languages, especially English and able to communicate cross-culturally.
- Have creativity and communication skills for presentation.

COURSES

A. General Education Courses **36 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1404	Thai Culture and Traditions (For International students)	3

Social Science Courses ***12 Credits***

CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 2016	Psychology for Persuasive Communication	3
CA 4010	Law and Ethical Concerns for Communication	3
GE 2202	Ethics	3

Humanities Courses ***3 Credits***

GE 1102	Introduction to Philosophy	3

Science and Mathematics Courses ***6 Credits***

BG 1301	Fundamentals of Statistics	3
GE 1301	Environmental Science	3

B. Specialized Courses: **96 Credits**

Core Courses ***39 Credits***

CA 1001	Introduction to Communication	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
CA 1017	Introduction to Creative Communication Design	3
CA 2004	Introduction to Advertising	3
CA 2005	Introduction to Public Relations	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2015	Introduction to Performance Communication	3
CA 2018	Consumer Insight	3
MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3
NM 3401	Production for Communication Tools	3

Major Required Courses ***39 Credits***

CA 2003	Presentation Technique	3
CA 2013	Utilization of Multimedia Tools	3
CA 3011	Communication Arts Research	3
AD 3101	Principles of Marketing Communication	3
AD 3102	Advertising Media Planning	3
AD 3103	Advertising Creative Strategy	3
AD 3112	Brand Communication	3
AD 3119	Advertising and Marketing Communication Research	3
AD 4100	Seminar in Advertising	3
AD 4101	Advertising Workshop I	3
AD 4102	Advertising Workshop II	3
AD 4104	Advertising and Marketing Communication Management	3
AD 4115	Campaign Planning and Management	3





Major Elective Courses ***18 Credits***

Students can choose courses to fulfill 18 credits from the following courses and/or choose minor courses of other departments.

AD 3106	Art Direction	3
AD 3114	Interactive Advertising and Marketing Communication	3
AD 3113	Customer Relationship Management	3
AD 3115	International Communication Campaign	3
AD 3116	Account Planning	3
AD 3117	Advertising and Popular Culture	3
AD 3118	Selected Topics in Advertising	3
AD 4107	Basic Copywriting (Thai)	3
or AD 4108	Basic Copywriting (English)	
AD 4103	Creative Media Management	3
AD 4111	Advanced Brand Communication	3
AD 4122	Direct Communication Campaign Management	3
AD 4123	Marketing Channel Communication	3

Students can take New Media Communication, Performance Communication, Public Relations courses, as major elective courses upon completion of the prerequisites (if any).

Minor Courses **18 Credits**

New Media Communication

Minor Required Courses ***9 Credits***

NM 3402	Film and Time-based Media Production	3
NM 3404	Multimedia Editing	3
NM 4406	Broadcast Media Production and Directing	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of New Media Communication upon completion of the prerequisites (if any).

Performance Communication

Minor Required Courses ***9 Credits***

PC 3305	Script Writing and Analysis	3
PC 3308	Performance/ Event Criticism	3
PC 4311	Production Management for Performance	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Performance Communication upon completion of the prerequisites (if any).

Public Relations

Minor Required Courses ***9 Credits***

PR 3202	Strategic Public Relations Campaign Planning and Evaluation	3
PR 3214	Organization Communication	3
PR 4201	Corporate Communication and Stakeholder Relations	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Public Relation upon completion of the prerequisites (if any).

C. Free Elective Courses ***6 Credits***

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
CA 1001	Introduction to Communication	3
CA 1007	Introduction to Creative Communication	3
CA 1012	Macro-environment, Media Effect and Media Literacy	3
GE 1301	Environmental Science	3
MGT 1101	Introduction to Business	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
GE 1102	Introduction to Philosophy	3
GE 1403	Communication in Thai	3
	Total	***18***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CA 2003	Presentation Technique	3
CA 2004	Introduction to Advertising	3
CA 2015	Introduction to Performance Communication	3
CA 2016	Psychology for Persuasive Communication	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CA 2005	Introduction to Public Relations	3
CA 2007	Introduction to New Media Broadcasting	3
CA 2013	Utilization of Multimedia Tools	3
CA 2018	Consumer Insight	3
GE 2202	Ethics	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
AD 3101	Principles of Marketing Communication	3
AD 3102	Advertising Media Planning	3
AD 3103	Advertising Creative Strategy	3
AD 3112	Brand Communication	3
CA 3011	Communication Arts Research	3
NM 3401	Production for Communication Tools	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
AD 3119	Advertising and Marketing Communication Research	3
AD 4100	Seminar in Advertising	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***18***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
AD 4101	Advertising Workshop I	3
AD 4104	Advertising and Marketing Communication Management	3
CA 4010	Law and Ethical Concerns for Communication	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***15***

Second Semester

Course Code	Course Title	Credits
AD 4102	Advertising Workshop II	3
AD 4115	Campaign Planning and Management	3
MGT 2900	Principles of Management	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Total	***15***





DEPARTMENT OF NEW MEDIA COMMUNICATION

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have morals, ethics, public consciousness, and social responsibility in accordance with professional code of ethics.
- Have well-grounded academic knowledge,skills, and practical experiences in the field of new media communication, communication arts,management and business and able to work inthe field of new media communication and communication in the society.
- Have the skill to analyze situations by appropriately applying their knowledge, reasoning, and judgment when they encounter situations in different social contexts, and cultures.
- Have a good personality with good social manners and able to appropriately work with people at all levels.

COURSES

A. General Education Courses **36 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1404	Thai Culture and Traditions (For International students)	3

Social Science Courses ***12 Credits***

CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 2016	Psychology for Persuasive Communication	3
CA 4010	Law and Ethical Concerns for Communication	3
GE 2202	Ethics	3

Humanities Courses ***3 Credits***

GE 1102	Introduction to Philosophy	3

Science and Mathematics Courses ***6 Credits***

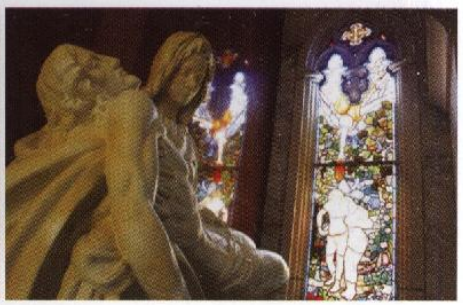
GE 1301	Environmental Science	3
BG 1301	Fundamentals of Statistics	3

B. Specialized Courses: **100 Credits**

Core Courses ***39 Credits***

CA 1001	Introduction to Communication	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
CA 1017	Introduction to Creative Communication Design	3
CA 2004	Introduction to Advertising	3
CA 2005	Introduction to Public Relations	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2015	Introduction to Performance Communication	3
CA 2018	Consumer Insight	3
MGT 1101	Introduction to Business	3





MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3
NM 3401	Production for Communication Tools	3

Major Required Courses ***43 Credits***

AD 3101	Principles of Marketing Communication	3
CA 2003	Presentation Technique	3
CA 2013	Utilization of Multimedia Tools	3
CA 3011	Communication Arts Research	3
NM 3402	Film and Time-based Media Production	3
NM 3404	Multimedia Editing	3
NM 3410	New Media Application	3
NM 3412	Creativity and Innovation	3
NM 3420	Audience Context Analysis	3
NM 4405	Broadcast and New Media Management	3
NM 4406	Broadcast Media Production and Directing	3
NM 4407	Seminar in Broadcast and New Media	3
NM 4408	Studio Workshop	6
NM 4420	Studio Internship (200 Hours)	1

Major Elective Courses ***18 Credits***

NM 3411	Advanced Photography and Digital Imaging	3
NM 3414	New Media Journalism	3
NM 3417	Computer Graphics for Communication Design	3
NM 3418	Interactive Media Art	3
NM 3419	Selected Topics in New Media	3
NM 4413	Advanced Multimedia Editing	3
NM 4414	Sound for Video Production	3
NM 4417	Media Content Analysis	3
NM 4418	Integrated New Media Environments	3
NM 4419	Utilization of New Media Programming	3

Students can take Advertising, Performance Communication, and Public Relations courses as major elective courses upon completion of the prerequisites (if any).

Minor Courses ***18 Credits***

Students can choose one of the following groups as the minor courses.

Advertising

Minor Required Courses ***9 Credits***

AD 3102	Advertising Media Planning	3
AD 3103	Advertising Creative Strategy	3
AD 3112	Brand Communication	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Advertising upon completion of the prerequisites (if any).

Performance Communication

Minor Required Courses ***9 Credits***

PC 3305	Script Writing and Analysis	3
PC 3308	Performance/ Event Criticism	3
PC 4311	Production Management for Performance	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Performance Communication upon completion of the prerequisites (if any).

Public Relations

Minor Required Courses ***9 Credits***

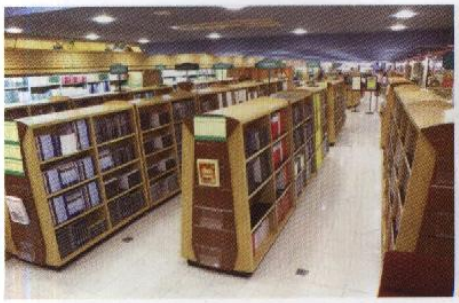
PR 3202	Strategic Public Relations Campaign Planning and Evaluation	3
PR 3214	Organization Communication	3
PR 4201	Corporate Communication and Stakeholder Relations	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Public Relation upon completion of the prerequisites (if any).

C. Free Elective Courses ***6 Credits***

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).





STUDY PLAN

FIRST YEAR
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
CA 1001	Introduction to Communication	3
CA 1007	Introduction to Creative Communication	3
CA 1012	Macro-environment, Media Effect and Media Literacy	3
GE 1301	Environmental Science	3
MGT 1101	Introduction to Business	3
	Total	***18***

Second Semester

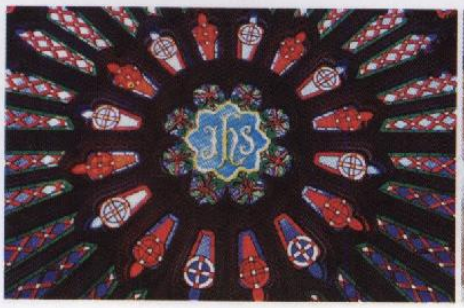
Course Code	Course Title	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
GE 1102	Introduction to Philosophy	3
GE 1403	Communication in Thai	3
	Total	***18***

SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CA 2003	Presentation Technique	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2015	Introduction to Performance Communication	3
CA 2016	Psychology for Persuasive Communication	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CA 2004	Introduction to Advertising	3
CA 2005	Introduction to Public Relations	3
CA 2013	Utilization of Multimedia Tools	3
GE 2202	Ethics	3
NM 3401	Production for Communication Tool	3
	Total	***18***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
AD 3101	Principles of Marketing Communication	3
CA 2018	Consumer Insight	3
CA 3011	Communication Arts Research	3
NM 3402	Film and Time-based Media	3
NM 3410	New Media Application	3
	Major Elective or Minor Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
NM 3404	Multimedia Editing	3
NM 3412	Creativity and Innovation	3
NM 3420	Audience Context Analysis	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***18***

Summer Session

Course Code	Course Title	Credits
NM 4420	Studio Internship (200 Hours)	1
	Total (200 Hours)	***1***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
CA 4010	Law and Ethical Concerns for Communication	3
MGT 2900	Principles of Management	3
NM 4405	Broadcast and New Media Management	3
NM 4406	Broadcast Media Production and Directing	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
NM 4407	Seminar in Broadcast and New Media	3
NM 4408	Studio Workshop	6
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Total	***15***







DEPARTMENT OF PERFORMANCE COMMUNICATION

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have morals, ethics, public consciousness, and social responsibility in accordance with professional code of ethics.
- Know and understand the principles and practices in organizing including creating and designing a performance both behind the scene and on stage.
- Logically and systematically apply performance principles and practices when organizing and managing a performance.
- Effectively and efficiently use a performance, a show and an event as a communication tool.
- Able to work with others harmoniously and responsibly.
- Able to use information and communication technology in creating a performance.
- Able to use English in communicating verbal cues and communicating to a diverse audience

COURSES

A. General Education Courses **36 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1404	Thai Culture and Traditions (For International students)	3

Social Science Courses ***12 Credits***

CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 2016	Psychology for Persuasive Communication	3
CA 4010	Law and Ethical Concerns for Communication	3
GE 2202	Ethics	3

Humanities Courses ***3 Credits***

GE 1102	Introduction to Philosophy	3

Science and Mathematics Courses ***6 Credits***

BG 1301	Fundamentals of Statistics	3
GE 1301	Environmental Science	3

B. Specialized Courses: **96 Credits**

Core Courses ***39 Credits***

CA 1001	Introduction to Communication	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
CA 1017	Introduction to Creative Communication Design	3
CA 2004	Introduction to Advertising	3
CA 2005	Introduction to Public Relations	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2015	Introduction to Performance Communication	3
CA 2018	Consumer Insight	3





MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3
MKT 2280	Principles of Marketing	3
NM 3401	Production for Communication Tools	3

Major Required Courses ***39 Credits***

AD 3101	Principles of Marketing Communication	3
CA 2003	Presentation Technique	3
CA 2013	Utilization of Multimedia Tools	3
CA 3011	Communication Arts Research	3
PC 3305	Script Writing and Analysis	3
PC 3306	Marketing Management for Performance Project	3
PC 3307	Visualization of Stage/ Event	3
PC 3308	Performance/Event Criticism	3
PC 4306	Stage/Event Management	3
PC 4308	Performance Communication Workshop I	3
PC 4309	Performance Communication Workshop II	3
PC 4310	Seminar in Performance Communication	3
PC 4311	Production Management for Performance	3

Major Elective Courses ***18 Credits***

Students can choose courses to fulfill 18 credits from the following courses and/or choose minor courses of other departments.

PC 3301	Art and Literature Appreciation	3
PC 3302	Principles of Performance Design	3
PC 3320	Script Writing and Adaptation in Thai	3
or PC 3321	Script Writing and Adaptation in English	3
PC 3322	Acting for Personality/Social Interaction	3
PC 3323	Fundamental of Acting	3
PC 3324	Sound for Performance/Event	3
PC 4315	Fundamentals of Lighting	3
PC 4316	Directing	3
PC 4325	Costume and Make-up Selection	3
PC 4326	Scenery and Prop Creation	3
PC 4327	Selected Topics in Performance Communication	3

Students can take Advertising, New Media Communication, Public Relations, courses as major elective courses upon completion of the prerequisites (if any).

Minor Courses ***18 Credits***

New Media Communication

Minor Required Courses ***9 Credits***

NM 3402	Film and Time-based Media Production	3
NM 3404	Multimedia Editing	3
NM 4406	Broadcast Media Production and Directing	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of New Media Communication upon completion of the prerequisites (if any).

Public Relations

Minor Required Courses ***9 Credits***

PR 3202	Strategic Public Relations Campaign Planning and Evaluation	3
PR 3214	Organizational Communication	3
PR 4201	Corporate Communication and Stakeholder Relations	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Public Relation upon completion of the prerequisites (if any).

Advertising

Minor Required Courses ***9 Credits***

AD 3102	Advertising Media Planning	3
AD 3103	Advertising Creative Strategy	3
AD 3112	Brand Communication	3





Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Advertising upon completion of the prerequisites (if any).

C. Free Elective Courses 6 Credits

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).



STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
CA 1001	Introduction to Communication	3
CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 1017	Introduction to Creative Communication Design	3
GE 1301	Environmental Science	3
MGT 1101	Introduction to Business	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
GE 1102	Introduction to Philosophy	3
GE 1403	Communication in Thai	3
	Total	***18***





SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CA 2003	Presentation Technique	3
CA 2005	Introduction to Public Relations	3
CA 2015	Introduction to Performance Communication	3
CA2016	Psychology for Persuasive Communication	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

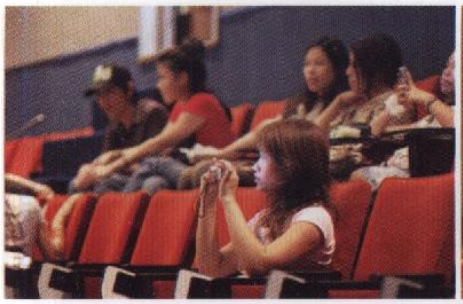
Course Code	Course Title	Credits
BG 2001	English IV	3
CA 2004	Introduction to Advertising	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2013	Utilization of Multimedia Tools	3
CA 3018	Consumer Insight	3
GE 2202	Ethics	3
	Total	***18***

THIRD YEAR
First Semester

Course Code	Course Title	Credits
AD 3101	Principles of Marketing Communication	3
CA 3011	Communication Arts Research	3
NM 3401	Production for Communication Tools	3
PC 3305	Script Writing and Analysis	3
PC 3308	Performance/ Event Criticism	3
	Major Elective or Minor Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
PC 3306	Marketing Management for Performance Project	3
PC 3307	Visualization of Stage/ Event	3
PC 4306	Stage/Event Management	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Total	***15***



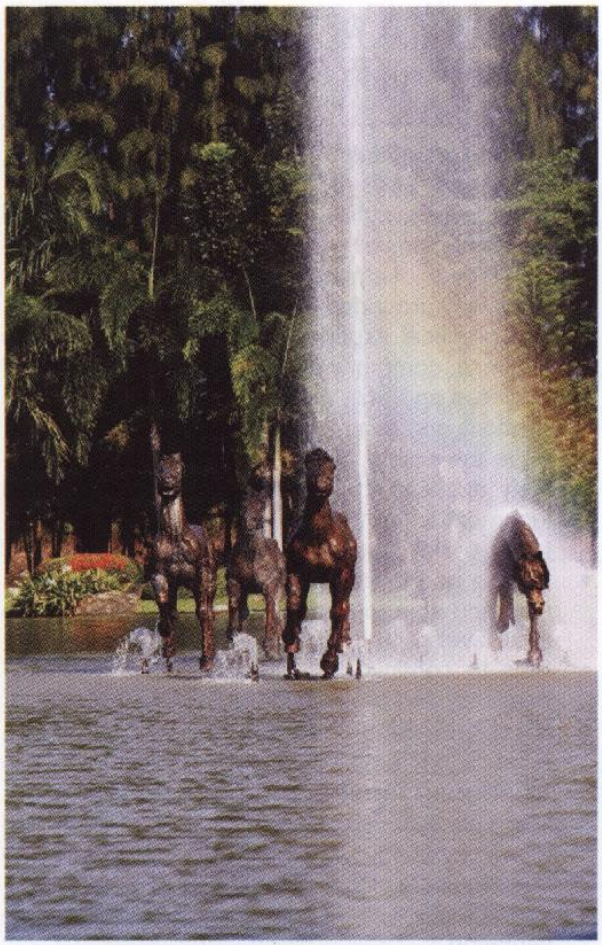


FOURTH YEAR
First Semester

Course Code	Course Title	Credits
CA 4010	Law and Ethical Concern for Communication	3
MGT 2900	Principles of Management	3
PC 4308	Performance Communication Workshop I	3
PC4311	Production Management for Performance	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
PC 4309	Performance Communication Workshop II	3
PC 4310	Seminar in Performance Communication	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***15***








DEPARTMENT OF PUBLIC RELATIONS

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Have morals, ethics, public consciousness, and social responsibility in accordance with professional code of ethics.
- Have well-grounded academic knowledge, skills, and practical experiences in the field of public relations, communication arts, management and business and able to work in the field of public relations and communication in the society.
- Have the skill to analyze situations by appropriately applying their knowledge, reasoning, and judgment when they encounter situations in different social contexts, and cultures.
- Have a good personality with good social manners and able to appropriately work with people at all levels.
- Able to continuously develop themselves academically and professionally.
- Have knowledge and ability to use basic mathematics to interpret data and analyze information for planning, management, and development.
- Make efficient use of information technology and foreign languages, especially English and able to communicate cross-culturally.
- Have creativity and communication skills for presentation.

COURSES

A. General Education Courses **36 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1404	Thai Culture and Traditions (For International students)	3

Social Science Courses ***12 Credits***

CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 2016	Psychology for Persuasive	3
CA 4010	Law and Ethical Concerns for Communication	3
GE 2202	Ethics	3

Humanities Courses ***3 Credits***

GE 1102	Introduction to Philosophy	3

Science and Mathematics Courses ***6 Credits***

BG 1301	Fundamentals of Statistics	3
GE 1301	Environmental Science	3

B. Specialized Courses: **97 Credits**

Core Courses ***39 Credits***

CA 1001	Introduction to Communication	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
CA 1017	Introduction to Creative Communication Design	3
CA 2004	Introduction to Advertising	3
CA 2005	Introduction to Public Relations	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2015	Introduction to Performance Communication	3
CA 2018	Consumer Insight	3
MGT 1101	Introduction to Business	3
MGT 2900	Principles of Management	3





MKT 2280	Principles of Marketing	3
NM 3401	Production for Communication Tools	3

Major Required Courses ***40 Credits***

AD 3101	Principles of Marketing Communication	3
CA 2003	Presentation Technique	3
CA 2013	Utilization of Multimedia Tools	3
CA 3011	Communication Arts Research	3
PR 3202	Strategic Public Relations Campaign Planning and Evaluation	3
PR 3204	Marketing Public Relations	3
PR 3214	Organizational Communication	3
PR 3215	Writing for Public Relations in English	3
PR 3227	Media Relations and Planning	3
PR 4201	Corporate Communication and Stakeholder Relations	3
PR 4207	Public Relations Workshop I	3
PR 4208	Public Relations Workshop II	3
PR 4209	Seminar in Public Relations	3
PR 4211	Public Relations Internship (200 Hours)	1

Major Elective Courses ***18 Credits***

PR 3210	Negotiations	3
PR 3216	Writing for Public Relations in Thai	3
PR 3217	Desktop Publishing/ Presentation Graphics	3
PR 3218	Special Events Management for Public Relations	3
PR 3224	Applied Research for Public Relations	3
PR 3225	Personality Development and Personal Branding	3
PR 3228	Intercultural Communication	3
PR 3229	Folk and Traditional Media Communication	3
PR 3230	Digital Public Relations	3
PR 4219	Community Relations	3
PR 4220	Financial and Investor Relations	3
PR 4221	Public Relations for Issue and Crisis Management	3
PR 4222	News Writing and Reporting	3
PR 4223	Magazine/Feature Writing	3
PR 4226	Selected Topics in Public Relations	3

Students can take Advertising, New Media Communication, Performance Communication courses as major elective courses upon completion of the prerequisites (if any).

Minor Courses ***18 Credits***

Students can choose one of the following groups as the minor courses.

Advertising

Minor Required Courses ***9 Credits***

AD 3102	Advertising Media Planning	3
AD 3103	Advertising Creative Strategy	3
AD 3112	Brand Communication	3

Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Advertising upon completion of the prerequisites (if any).

New Media Communication

Minor Required Courses ***9 Credits***

NM 3402	Film and Time-based Media Production	3
NM 3404	Multimedia Editing	3
NM 4406	Broadcast Media Production and Directing	3

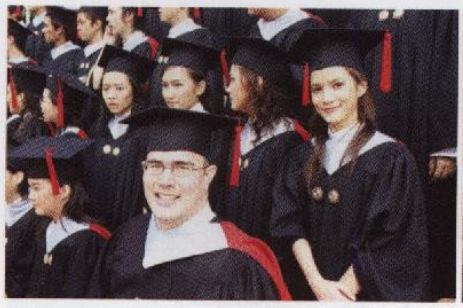
Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of New Media Communication upon completion of the prerequisites (if any).

Performance Communication

Minor Required Courses ***9 Credits***

PC 3305	Script Writing and Analysis	3
PC 3308	Performance/Event Criticism	3
PC 4311	Production Management for Performance	3



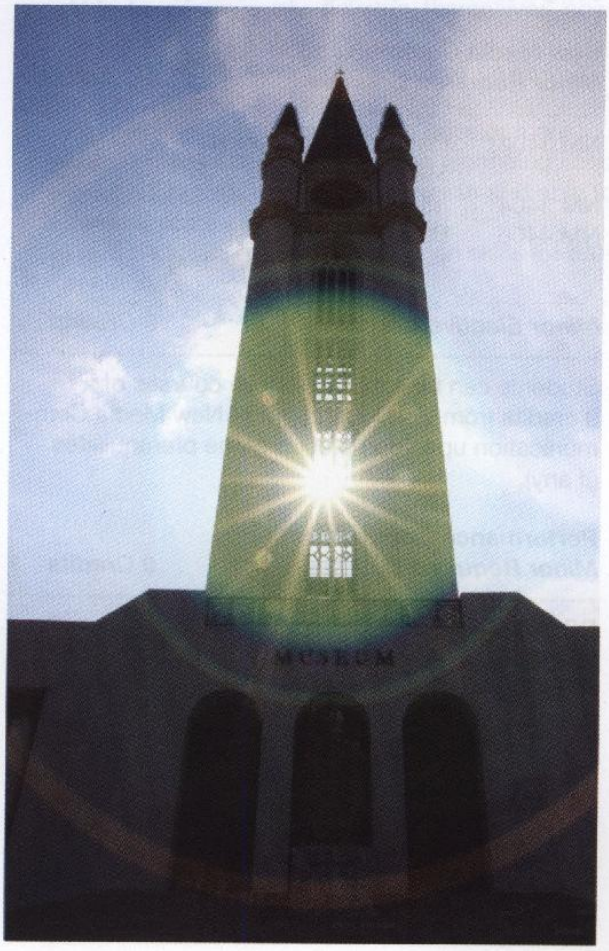


Minor Elective Courses ***9 Credits***

Students can take minor elective courses of 9 credits from the Department of Performance Communication upon completion of the prerequisites (if any).

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).



STUDY PLAN

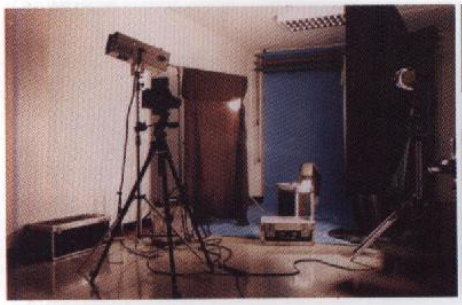
FIRST YEAR

First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
CA 1001	Introduction to Communication	3
CA 1012	Macro-environment, Media Effect and Media Literacy	3
CA 1017	Introduction to Creative Communication Design	3
GE 1301	Environmental Science	3
MGT 1101	Introduction to Business	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1301	Fundamentals of Statistics	3
CA 1002	Introduction to Photography and Cinematography	3
CA 1006	Introduction to Journalism and Mass Communication	3
GE 1102	Introduction to Philosophy	3
GE 1403	Communication in Thai	3
	Total	***18***





SECOND YEAR
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
CA 2003	Presentation Technique	3
CA 2005	Introduction to Public Relations	3
CA 2015	Introduction to Performance Communication	3
CA 2016	Psychology for Persuasive Communication	3
MKT 2280	Principles of Marketing	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CA 2004	Introduction to Advertising	3
CA 2007	Introduction to New Media and Broadcasting	3
CA 2013	Utilization of Multimedia Tools	3
CA 2018	Consumer Insight	3
GE 2202	Ethics	3
	Total	***18***

THIRD YEAR
First Semester

Course Code	Course Title	Credits
AD 3101	Principles of Marketing Communication	3
CA 3011	Communication Arts Research	3
NM 3401	Production for Communication Tools	3
PR 3202	Strategic Public Relations Campaign Planning and Evaluation	3
PR 3214	Organizational Communication	3
PR 3215	Writing for Public Relations in English	3
	Total	***18***

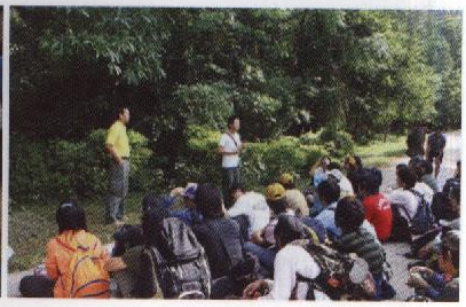
Second Semester

Course Code	Course Title	Credits
MGT 2900	Principles of Management	3
PR 3204	Marketing Public Relations	3
PR 3227	Media Relations and Planning	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***18***

Summer Session

Course Code	Course Title	Credits
PR 4211	Public Relations Internship (200 Hours)	1
	Total (200 Hours)	***1***





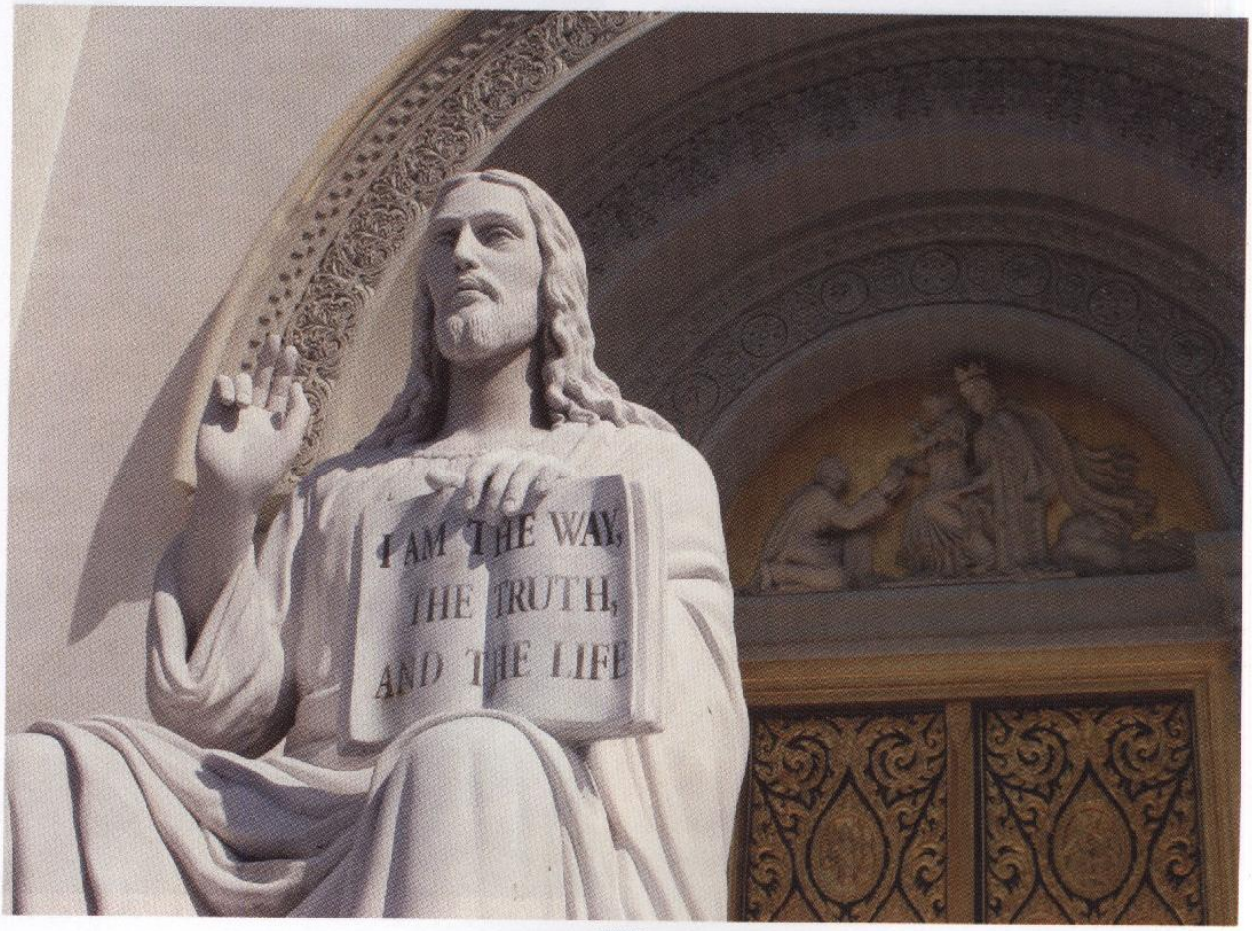
FOURTH YEAR

First Semester

Course Code	Course Title	Credits
CA 4010	Law and Ethical Concerns for Communication	3
PR 4201	Corporate Communication and Stakeholder Relations	3
PR 4207	Public Relations Workshop I	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Total	***15***

Second Semester

Course Code	Course Title	Credits
PR 4208	Public Relations Workshop II	3
PR 4209	Seminar in Public Relations	3
	Major Elective or Minor Course	3
	Major Elective or Minor Course	3
	Free Elective Course	3
	Total	***15***







DEPARTMENT OF VISUAL COMMUNICATION DESIGN

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows

- Exercise professional ethics and recognize the impact of creative works on the society.
- Capable of applying theoretical knowledge and technical skill in visual communication art to profession.
- Capable of using critical, logical and analytical thinking skills to solve problems in their profession and life.
- Capable of using English communication skills in conveying message and presenting professional works.
- Capable of using information technology in the practice of their profession.
- Capable of using artistic skills and production tool manipulating skills in visual communication design professional works.

COURSES

A. General Education Courses **31 Credits**

Language Courses ***12 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***7 Credits***

GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3

Humanities Courses ***9 Credits***

ART 4018	Art Appreciation	3
GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3

Science and Mathematics Courses ***3 Credits***

BG 1200	Mathematics for Business	3

B. Specialized Courses **109 Credits**

Core Courses ***45 Credits***

ART 1001	Drawing	3
ART 1002	2 Dimensional Foundation	3
ART 1003	Color Theory	3
ART 1004	Technical Drawing	3
ART 1005	Painting	3
ART 1006	3 Dimensional Foundation	3
ART 1208	Computer Graphic Foundation	3
ART 2009	History of Art	3
ART 2010	Typography	3
ART 2112	Illustration	3
ART 2311	Photography	3
ART 3014	Thai Art	3
ART 4019	Aesthetics	3
ART 4020	Law and Ethics for Arts and Design	3
MKT 2280	Principles of Marketing	3

Major Required Courses ***49 Credits***

ART 2313	Digital Imaging	3
ART 3016	History of Modern Design	3
ART 3017	Internship (160 hours)	1
ART 3215	Interactive and Time Base Media	3
VIS 1101	Visual Communication Design I	3
VIS 2102	Visual Communication Design II	3
VIS 2103	Print Production	3
VIS 2104	Advanced Typography	3
VIS 2105	Visual Communication Design III	3
VIS 3106	Sketch Design	3
VIS 3107	Visual Communication Design IV	3
VIS 3110	Visual Communication Design V	3
VIS 4115	Design Management	3
VIS 4116	Art Thesis I	3
VIS 4121	Self Promotion	3
VIS 4122	Art Thesis II	6

Major Elective Courses ***15 Credits***

Choose one group of Elective Courses.





Graphic Design

VIS 3108	Publication Design	3
VIS 3111	Package Design	3
VIS 3112	Typeface Design	3
VIS 4117	Signage System and Way finding Design	3
VIS 4118	Display and Exhibition Design	3

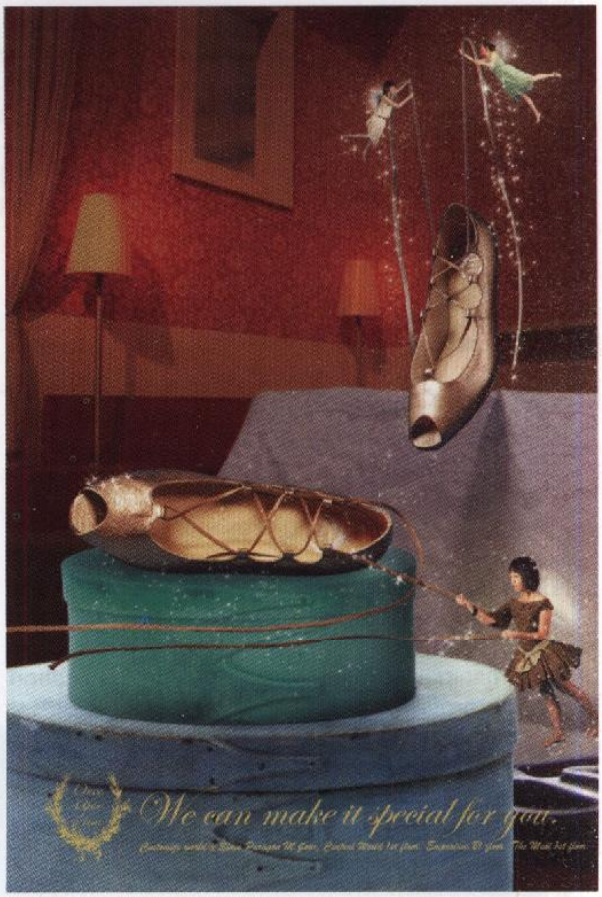
Advertising Design

VIS 3409	Idea-Generation Techniques	3
VIS 3413	Advertising Graphics	3
VIS 3414	Copywriting	3
VIS 4419	Production Design	3
VIS 4420	Advertising Campaign Design	3

C. Free Elective Courses — 6 Credits

VIS 4123	Individual Project	3
VIS 4124	Book Binding	3
VIS 4125	Sketch Fashion Design	3

Students can also take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
ART 1001	Drawing	3
ART 1002	2 Dimensional Foundation	3
ART 1003	Color Theory	3
ART 1004	Technical Drawing	3
BG 1001	English I	3
MGT 1101	Introduction to Business	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ART 1005	Painting	3
ART 1006	3 Dimensional Foundation	3
ART 1208	Computer Graphic Foundation	3
BG 1002	English II	3
BG 1200	Mathematics for Business	3
VIS 1101	Visual Communication Design I	3
	Total	***18***

SECOND YEAR

First Semester

Course Code	Course Title	Credits
ART 2009	History of Art	3
ART 2010	Typography	3
ART 2311	Photography	3
BG 2000	English III	3
MKT 2280	Principles of Marketing	3
VIS 2102	Visual Communication Design II	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ART 2112	Illustration	3
ART 2313	Digital Imaging	3
BG 2001	English IV	3
GE 1204	Physical Education	1
VIS 2103	Print Production	3
VIS 2104	Advanced Typography	3
VIS 2105	Visual Communication Design III	3
	Total	***19***





THIRD YEAR

First Semester

Course Code	Course Title	Credits
ART 3014	Thai Art	3
ART 3215	Interactive and Time Base Media	3
GE 2101	World Civilization	3
VIS 3106	Sketch Design	3
VIS 3107	Visual Communication Design IV	3
Major Elective Course : Graphic Design		
VIS 3108	Publication Design	3
Major Elective Course : Advertising Design		
VIS 3409	Idea-Generation Techniques	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ART 3016	History of Modern Design	3
VIS 3110	Visual Communication Design V	3
GE 2202	Ethics	3
MGT 2404	Managerial Psychology	3
Major Elective Courses : Graphic Design		
VIS 3111	Package Design	3
VIS 3112	Typeface Design	3
Major Elective Courses : Advertising Design		
VIS 3413	Advertising Graphics	3
VIS 3414	Copywriting	3
	Total	***18***

Summer Session

Course Code	Course Title	Credits
ART 3017	Internship (160 hours)	1
	Total (160 Hours)	***1***

FOURTH YEAR

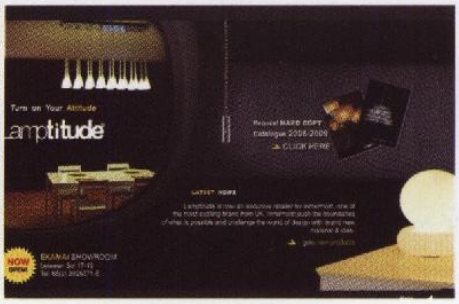
First Semester

Course Code	Course Title	Credits
ART 4018	Art Appreciation	3
VIS 4115	Design Management	3
VIS 4116	Art Thesis I	3
	Free Elective Course	3
Major Elective Courses : Graphic Design		
VIS 4117	Signage System and Way finding Design	3
VIS 4118	Display and Exhibition Design	3
Major Elective Courses : Advertising Design		
VIS 4419	Production Design	3
VIS 4420	Advertising Campaign Design	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ART 4019	Aesthetics	3
ART 4020	Law and Ethics for Arts and Design	3
VIS 4121	Self Promotion	3
VIS 4122	Art Thesis II	6
	Free Elective Course	3
	Total	***18***





DEPARTMENT OF COMPUTER GENERATED IMAGERY

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Exercise professional ethics and recognize the impact of creative works on the society.
- Capable of applying theoretical knowledge and technical skills in computer generated imagery to profession.
- Capable of using skills in critical, logical and analytical thinking to solve problems in their profession and life.
- Able to work with others in their field.
- Capable of using information technology in the practice of their profession.
- Capable of using communication skills in Thai and English on conveying message visualizing ideas and presenting professional works.

COURSES

A. General Education Courses		***31 Credits***
Language Courses		***12 Credits***
BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
Social Science Courses		***7 Credits***
GE 1204	Physical Education	1
GE 2202	Ethics	3
MGT 1101	Introduction to Business	3
Humanities Courses		***9 Credits***
ART 4018	Art Appreciation	3
GE 2101	World Civilization	3
MGT 2404	Managerial Psychology	3
Science and Mathematics Courses		***3 Credits***
BG1200	Mathematics for Business	3
B. Specialized Courses:		**109 Credits**
Core Courses		***45 Credits***
ART 1001	Drawing	3
ART 1002	2 Dimensional Foundation	3
ART 1003	Color Theory	3
ART 1004	Technical Drawing	3
ART 1005	Painting	3
ART 1007	Figure Drawing	3
ART 1208	Computer Graphics Foundation	3
ART 2009	History of Art	3
ART 2010	Typography	3
ART 2311	Photography	3
ART 2112	Illustration	3
ART 3014	Thai Art	3
ART 4019	Aesthetics	3
ART 4020	Law and Ethics for Art and Design	3
MKT 2280	Principles of Marketing	3





Major Required Courses ***49 Credits***

ART 3017	Internship (160 hours)	1
CGI 1201	Computer Graphics Design Studio I	3
CGI 2202	Introduction to Motion Picture and Animation	3
CGI 2203	Computer Graphics Design Studio II	3
CGI 2204	Introduction to 3D Modeling	3
CGI 2205	Motion Graphics Design	3
CGI 2206	Sound Design	3
CGI 3207	Animation Concept and Story Telling	3
CGI 3208	Computer Graphics Design Studio III	3
CGI 3209	3D Animation	3
CGI 3210	Computer Graphics Design Studio IV	3
CGI 3211	Cinematic Lighting & Rendering	3
CGI 3212	Computer Graphics Design Studio V	3
CGI 4223	Art Thesis I	3
CGI 4224	Computer Graphics Design Portfolio	3
CGI 4225	Art Thesis II	6

Major Elective Courses ***15 Credits***

Choose one group of elective courses

Animation

CGI 3213	Digital Image for Digital Production	3
CGI 3214	Movement Analysis and Integration	3
CGI 3215	Animation Production	3
CGI 3216	Creative Process of Character Design and Setup	3
CGI 4217	Digital Painting for Visual Effects	3

Visual Effects

CGI 3218	Cinematic Setup	3
CGI 3219	Principles of Digital Effects	3
CGI 3220	Digital Compositing	3
CGI 3221	Visual Effects I	3
CGI 4222	Visual Effects II	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

FIRST YEAR

First Semester

Course Code	Course Title	Credits
ART 1001	Drawing	3
ART 1002	2 Dimensional Foundation	3
ART 1003	Color Theory	3
ART 1004	Technical Drawing	3
ART 2009	History of Art	3
BG 1001	English I	3
MGT 1101	Introduction to Business	3
	Total	***21***

Second Semester

Course Code	Course Title	Credits
ART 1005	Painting	3
ART 1007	Figure Drawing	3
ART 1208	Computer Graphics Foundation	3
BG 1002	English II	3
BG 1200	Mathematics for Business	3
CGI 1201	Computer Graphics Design Studio I	3
	Total	***18***

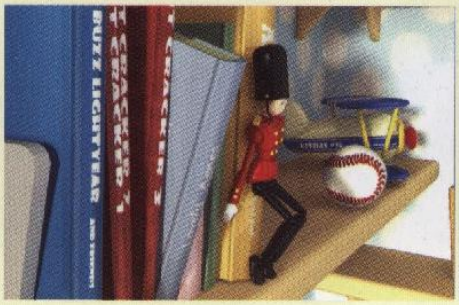
SECOND YEAR

First Semester

Course Code	Course Title	Credits
ART 2010	Typography	3
ART 2112	Illustration	3
ART 2311	Photography	3
BG 2000	English III	3
CGI 2202	Introduction to Motion Picture and Animation	3
CGI 2203	Computer Graphics Design Studio II	3
MKT 2280	Principles of Marketing	3
	Total	***21***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
CGI 2204	Introduction to 3D Modeling	3
CGI 2205	Motion Graphics Design	3
CGI 2206	Sound Design	3
CGI 2207	Animation Concept and Story Telling	3
CGI 2208	Computer Graphics Design Studio III	3
GE 1204	Physical Education	1
	Total	***19***






THIRD YEAR

First Semester

Course Code	Course Title	Credits
ART 3014	Thai Art	3
CGI 3209	3D Animation	3
CGI 3210	Computer Graphics Design Studio IV	3
GE 2101	World Civilization	3
Major Elective Courses : Animation		
CGI 3213	Digital Image for Digital Production	3
CGI 3214	Movement Analysis and Integration	3
Major Elective Courses Course : Visual Effects		
CGI 3218	Cinematic Setup	3
CGI 3219	Principles of Digital Effects	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
CGI 3211	Cinematic Lighting & Rendering	3
CGI 3212	Computer Graphics Design Studio V	3
MGT 2404	Managerial Psychology	3
Major Elective Courses : Animation		
CGI 3215	Animation Production	3
CGI 3216	Creative Process of Character Design and Setup	3
Major Elective Courses Course : Visual Effects		
CGI 3220	Digital Compositing	3
CGI 3221	Visual Effects I	3
	Total	***15***

Summer Session

Course Code	Course Title	Credits
ART 3017	Internship (160 hours)	1
	Total (160 Hours)	***1***

FOURTH YEAR

First Semester

Course Code	Course Title	Credits
ART 4018	Art Appreciation	3
ART 4019	Aesthetics	3
CGI 4223	Art Thesis I	3
GE 2202	Ethics	3
	Free Elective Course	3
Major Elective Courses : Animation		
CGI 4217	Digital Painting for Visual Effects	3
Major Elective Courses Course : Visual Effects		
CGI 4222	Visual Effects II	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
ART 4020	Law and Ethics for Arts and Design	3
CGI 4224	Computer Graphics Design Portfolio	3
CGI 4225	Art Thesis II	6
	Free Elective Course	3
	Total	***15***


ASSUMPTION UNIVERSITY

SCHOOL OF LAWS

Curriculum Structure

Courses	*Laws*
A. General Education Courses	30
• Language Courses	15
• Social Science Courses	9
• Humanities Courses	3
• Science and Mathematics Courses	3
B. Specialized Courses	113
• Core Courses	90
• Major Required Courses	21
• Major Elective Courses	2
C. Free Electives Courses	6
Total	*149*

OBJECTIVES

- To produce well-rounded lawyers who possess the ability to communicate in English.
- To become a leading academic institution for the study of Business Law and International Business Law.
- To provide up- to- date training and better understanding of current international business law issues to legal community of the nation.
- Have moral and ethics in the practice of law profession and demonstrate fairness and responsibility to society.
- Have knowledge in basic law, business law and passes English skills for reading, for communication and for writing.
- Use cognitive skills and able to use knowledge in law to analyze and solve problems appropriately according to situations.
- Able to work with others and able to adjust oneself to working environment and coworkers appropriately.
- Posses leadership skill and have responsibility to oneself and the society.
- Able to plan for one's development and acquisition of knowledge.
- Able to use information technology effectively in communication.





GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Laws upon students who meet all of the following requirements:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative Grade Point Average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
  Have obtained library and financial clearance from the university
- Have demonstrated good behavior and discipline

COURSES

A. General Education Courses — *30 Credits*

Language Courses — **15 Credits**

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3

Social Science Courses — **9 Credits**

BG 2403	Introduction to Economics	3
GE 1202	General Psychology	3
GE 2202	Ethics	3

Humanities Courses — **3 Credits**

GE 2101	World Civilization	3

Science and Mathematics Courses — **3 Credits**

GE 1301	Environment Science	3



B. Specialized Courses — *113 Credits*

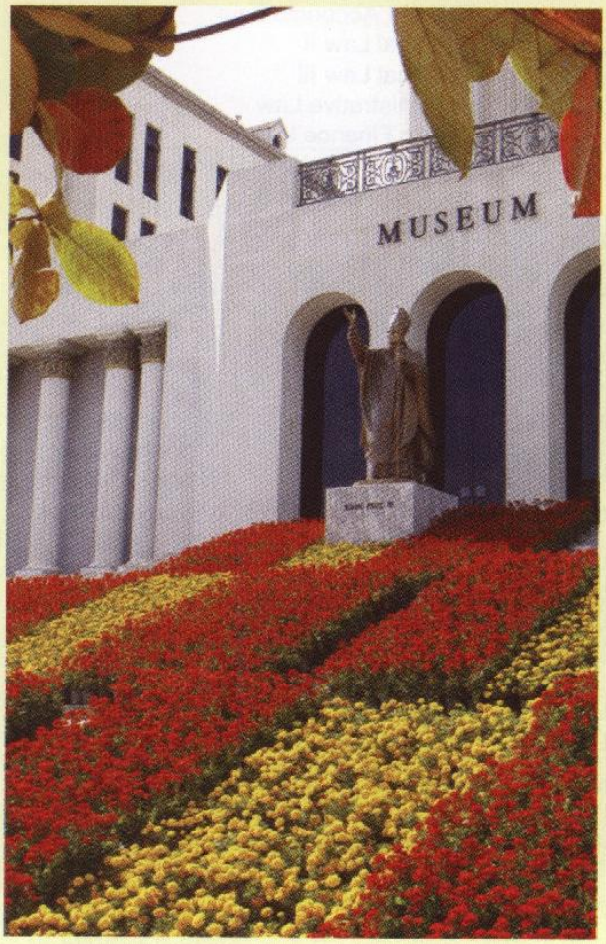
Core Courses — **90 Credits**

LW 1101	Juristic Acts and Contracts Law	3
LW 1102	Property and Land Law	3
LW 1201	Criminal Law I	3
LW 1501	Principles of Private Law	3
LW 1502	Principle of Public Law	2
LW 1503	Thai Legal History	2
LW 1504	Constitutional Law	3
LW 2103	Obligations Law	3
LW 2104	Law of Delict	3
LW 2105	Insurance Law	2
LW 2106	Specific Contracts I	3
LW 2107	Partnership and Company Law	3
LW 2108	Negotiable Instruments and Current Accounts Law	2
LW 2202	Criminal Law II	2
LW 2203	Criminal Law III	3
LW 2505	Administrative Law	2
LW 2601	Public Finance Law	2
LW 2602	Computer Law and Computer for Legal Research	3
LW 3109	Specific Contracts II	3
LW 3110	Family Law	3
LW 3111	Secured Transactions Law	2
LW 3112	Succession Law	3
LW 3301	Civil Procedural Law	4
LW 3302	Criminal Procedural Law	4
LW 3303	Constitution of Courts of Justice and Judicial System	2
LW 3304	Civil Procedural Law on Execution of Judgment and Orders	2
LW 3305	Evidence Law	3
LW 3306	Bankruptcy Law	3
LW 3401	Public International Law	3
LW 3602	Tax Law I	3
LW 4402	Private International Law	3
LW 4506	Philosophy of Law	2
LW 4604	Labor and Social Security Law	3






Major Required Courses		21 Credits
LW 3001	English for Lawyers I	2
LW 3002	English for Lawyers II	2
LW 3603	Tax Law II	2
LW 4605	Intellectual Property Law	3
LW 4606	International Business Transactions Law	2
LW 4607	Banking and Financial Institutions Law	2
LW 4608	Securities and Securities Exchange Law	2
LW 4609	Principles of Contract Drafting	3
LW 4610	Investment Law	2
LW 4611	Counseling and Advocacy	2



Major Elective Courses		2 Credits
LW 4113	Seminar in Civil and Commercial Law	2
LW 4204	Criminology and Penology	2
LW 4205	Criminal Investigation	2
LW 4206	Seminar in Criminal Law	2
LW 4307	Juvenile and Family Law	2
LW 4308	Administrative Court and Administrative Procedure	2
LW 4309	Seminar in Civil Procedural Law	2
LW 4310	Seminar in Criminal Procedural Law	2
LW 4403	International Economic Law	2
LW 4404	Maritime Law	2
LW 4405	Law of the Sea	2
LW 4406	International Organization Law	2
LW 4407	Human Rights Law	2
LW 4408	ASEAN Law	2
LW 4507	Military Law	2
LW 4508	Environmental Law	2
LW 4509	Introduction to American and English Legal System	2
LW 4510	Forensic Medicine	2
LW 4511	Principles of Legal Profession	2
LW 4612	Customs Law	2
LW 4613	Industrial Law	2
LW 4614	Real Estate Law	2
LW 4615	Tax Law III	2
LW 4616	Consumer Protection Law	2
LW 4617	Anti-Monopoly Law	2
LW 4618	Commercial Arbitration Law	2
LW 4619	Natural Resources Law	2
LW 4620	Seminar in Tax Law	2
LW 4621	Seminar in Business Law	2
LW 4622	Electronic Commerce Law	2
LW 4623	Computer and Law: A Seminar Course	2

C. Free Electives Courses — *6 Credits*

Students can take free elective course which are offered by the school upon completion of the prerequisite(s) (if any).

STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	Credits
BG 1001	English I	3
GE 1202	General Psychology	3
GE 1301	Environmental Science	3
GE 1403	Communication in Thai	3
LW 1501	Principles of Private Law	3
LW 1502	Principle of Public Law	2
LW 1503	Thai Legal History	2
	Total	***19***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
BG 2403	Introduction to Economics	3
LW 1101	Juristic Acts and Contracts Law	3
LW 1102	Property and Land Law	3
LW 1201	Criminal Law I	3
LW 1504	Constitutional Law	3
	Total	***18***

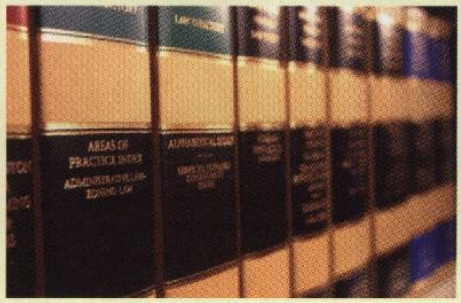
SECOND YEAR

First Semester

Code	Subjects	Credits
BG 2000	English III	3
GE 2101	World Civilization	3
LW 2103	Obligations Law	3
LW 2104	Law of Delict	3
LW 2105	Insurance Law	2
LW 2202	Criminal Law II	2
LW 2505	Administrative Law	2
LW 2601	Public Finance Law	2
	Total	***20***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
GE 2202	Ethics	3
LW 2106	Specific Contracts I	3
LW 2107	Partnership and Company Law	3
LW 2108	Negotiable Instruments and Current Accounts Law	2
LW 2203	Criminal Law III	3
LW 2602	Computer Law and Computer for Legal Research	3
	Total	***20***





THIRD YEAR

First Semester

Code	Subjects	Credits
LW 3001	English for Lawyers I	2
LW 3109	Specific Contracts II	3
LW 3110	Family Law	3
LW 3301	Civil Procedural Law	4
LW 3302	Criminal Procedural Law	4
LW 3303	Constitution of Courts of Justice and Judicial System	2
LW 3602	Tax Law I	3
	Total	***21***

Second Semester

Code	Subjects	Credits
LW 3002	English for Lawyers II	2
LW 3111	Secured Transactions Law	2
LW 3112	Succession Law	3
LW 3304	Civil Procedural Law on Execution Judgement and Orders	2
LW 3305	Evidence Law	3
LW 3306	Bankruptcy Law	3
LW 3401	Public International Law	3
LW 3603	Tax Law II	2
	Total	***19***

FOURTH YEAR

First Semester

Code	Subjects	Credits
LW 4402	Private International Law	3
LW 4506	Philosophy of Law	2
LW 4604	Labor and Social Security Law	3
LW 4605	Intellectual Property Law	3
LW 4606	International Business Transaction Law	2
	Two Free Elective Courses	6
	Total	***19***

Second Semester

Code	Subjects	Credits
LW 4607	Banking and Financial Institutions Law	2
LW 4608	Securities and Securities Exchange Law	2
LW 4609	Principles of Contract Drafting	2
LW 4610	Investment Law	2
LW 4611	Counseling and Advocacy	2
	One Major Elective Course	2
	Total	***12***



SCHOOL OF BIOTECHNOLOGY

Curriculum Structure

Courses	Agro-Industry	Food Technology
A. General Education Courses	30	30
- Language Courses	12	12
- Social Science Courses	6	6
- Humanities Courses	6	6
- Science and Mathematics Courses	6	6
B. Specialized Courses	106	106
- Core Courses	55	55
- Major Required Courses	42	42
- Major Elective Courses	9	9
C. Free Electives Courses	6	6
Total Credits	142	142





INTRODUCTION TO BIOTECHNOLOGY

Biotechnology literally means the application of life sciences to industrial processes. Principles of science learned in the classroom and the laboratory may be used by industry to develop and improve products, which can benefit the consumer and can provide a healthy profit for the producer.

The application of recombinant DNA techniques means that processes, which have been around for centuries, can be made to work better and faster. These include brewing, cheese-making as well as plant and animal breeding. This reshaping of the very essence of life in microorganisms, plants, and animals can improve existing agricultural products and/or create new and unique ones.

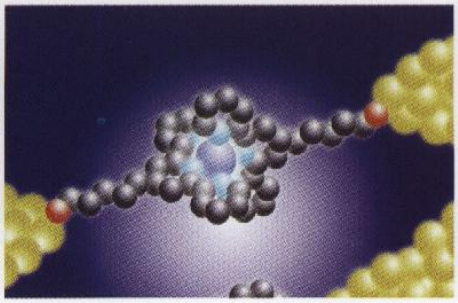
Because biotechnology is closely related to the agricultural sector, it has an impact on the lives of many Thais who are involved in agriculture and related industries. Biotechnology is currently providing agriculture with a variety of useful agents: soil innoculents, veterinary products, aquaculture and mariculture products, and also the development of new or improved plant and animal strains. In addition, the food industry is benefiting from new varieties of starter cultures and enzymes, as well as with food processing.

In service industries, biotechnology plays a major role in both aqueous and solid waste treatment, waste valorization and water purification.
Because Assumption University is aware of the importance of biotechnology for the development of Thailand and all of Southeast Asia, it offers the following Bachelor's Degree courses:

1. Agro-Industry
2. Food Technology

These are directly involved with applying bioscience research to food processing and other agricultural industries.





Here is a list of some positions held by food and agro-industrial scientists:

- Quality Assurance Manager
- Director of Research and Development
- Food Scientist
- Laboratory Director
- Sales Manager
- Project Leader, Technology
- General Manager, Research
- Meat Scientist
- Cereal Scientist
- Technology Development Manager
- Research Scientist
- Quality Assurance Supervisor
- Director of Quality Assurance
- Technical Sales Representative
- Food Inspector
- Plant Supervisor
- Food Chemist
- Senior Scientist
- Technical Director
- Food Microbiologist
- Sensory Scientist
- Food Technologist
- Dairy Products Scientist
- Agro Industry Supervisor
- Agro business employee and owner
- Alcoholic and non-alcoholic beverage Industry Supervisor

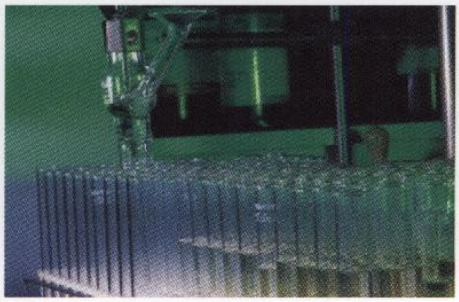
Students in Biotechnology undergraduate program at Assumption University benefit from a committed faculty, small classes, and an emphasis on teamwork and shared responsibility for learning. The undergraduate programs in Food Technology and Agro-Industry are designed to accommodate students with a variety of interests and career goals.

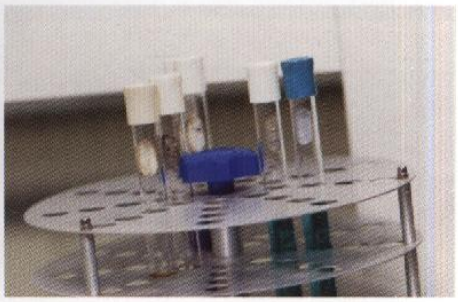
GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Science upon students who meet all the requirements as follows:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative Grade Point Average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the university
- Have demonstrated good behavior and discipline







DEPARTMENT OF AGRO-INDUSTRY

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Demonstrate moral responsibility to the society, the environment and their profession.
- Understand the principles of basic science and how they are applied to the improvement of productivity and competitiveness of agro-products.
- Understand the diversity of agro-commodity and the value chain of the important commodity.
- Understand the basic knowledge and procedure to create product innovation and design new process to improve safety and quality of agro products.
- Able to apply their knowledge in the practice of their profession.
- Able to work with people in the specialized field and other fields.
- Able to communicate effectively in spoken and written form.
- Able to make appropriate use of technology in the practice of their profession.
- Able to use information technology in searching for information, communication, and presentation of ideas effectively.



COURSES

A. General Education Courses **30 Credits**
Language Courses **12 Credits**

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 Credits***

BG 2403	Introduction to Economics	3
GE 2202	Ethics	3

Humanities Courses ***6 Credits***

GE 1202	General Psychology	3
GE 2101	World Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1201	Statistics 1	3
SC 2151	Introduction to Microcomputer Application	3

B. Specialized Courses **106 Credits**
Core Courses **55 Credits**

BS 1001	General Chemistry	3
BS 1002	General Chemistry Laboratory	1
BS 1005	Principles of Biology	3
BS 1006	Biology Laboratory	1
BS 1007	Organic Chemistry	3
BS 1008	Organic Chemistry Laboratory	1
BS 1101	Calculus I for Bioscience	3
BS 1102	Calculus II for Bioscience	3
BS 1201	Physics for Bioscience	3
BS 1202	Physics Laboratory for Bioscience	1
BS 2004	Analytical Chemistry	3
BS 2005	Analytical Chemistry Laboratory	1
BS 2006	Basic Biochemistry	3
BS 2007	Basic Biochemistry Laboratory	1
BS 2008	Physical Chemistry	3
BS 2011	Introduction to Microbiology	3
BS 2012	Genetics	3
BS 2013	Engineering Drawing for Bioscience	1
BT 2011	Introduction to Biotechnology	3
BT 3013	Introduction to Bioprocessing Engineering	3





BT 3015	Industrial Fermentation	3
BT 3016	Enzyme Technology	3
BT 3017	Principles of Research	3

Major Required Courses ***42 Credits***

AI 3201	Biological Material and Biodegradation	3
AI 3202	Introduction to Agro-Industry	2
AI 3203	Instrumentation and Control in Agro-Industrial Process	3
AI 3204	Processing of Agricultural Products I	3
AI 3205	Biochemical Engineering	3
AI 3206	Agro-Industry Management and Marketing	3
AI 3207	Unit Operation of Agro-Industry I	3
AI 3208	Standards and Regulations of Agricultural products	2
AI 4208	Processing of Agricultural Products II	3
AI 4209	Unit Operation for Agro-Industry II	3
AI 4211	Fermentation Process	3
AI 4213	Agro-Industrial Quality Control	3
AI 4218	Agro-Industrial Product Development	3
AI 4290	Special Project	3
AI 4291	Field Trip	1
AI 4292	Seminar	1
AI 4294	Internship(300 Hours)	Non-credit

Major Elective Courses ***9 Credits***

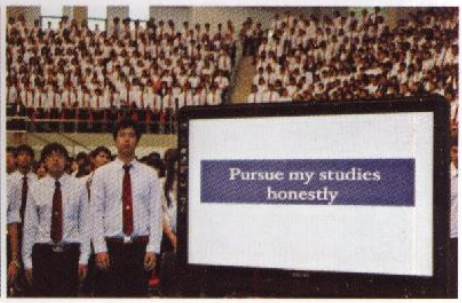
AI 4212	Tissue Culture Techniques and Application	3
AI 4215	Agro-Industry Preservation and Packaging	3
AI 4216	Fiber Technology	3
AI 4217	Essential Oil Technology	3
AI 4219	Sugar Technology	3
AI 4220	Post Harvest Technology	3
AI 4221	Alcoholic Beverage Technology	3
AI 4222	Water and Waste Management	3
AI 4223	Waste and By-product Utilization	3
AI 4226	Plant Breeding Technology	3
AI 4232	Secondary Metabolites of Plant Cells	3
AI 4233	Pulp and Paper Technology	3
AI 4234	Wood Technology	3
AI 4235	Rubber Technology	3
AI 4236	Feed Manufacturing Technology	3
AI 4237	Leather Product Technology	3
AI 4238	Mushroom Cultivation Technology	3
AI 4239	Selected Topic	3
BS 4001	Ecology, Conservation and Environmentalism	3
BT 3014	Microbial Physiology	3
BT 3018	Genetic Engineering	3
FT 3103	Food Microbiology	3
FT 3108	Food Chemistry I	3
FT 3109	Food Chemistry II	3
FT 4115	Fruit and Vegetable Technology	3
FT 4117	Dairy Technology	3
FT 4121	Meat Poultry and Fishery Technology	3
FT 4123	Food Sanitation	3
FT 4124	Lipid Technology	3
FT 4126	Food Packaging	3
FT 4127	Cereal Technology	3
FT 4132	Color and Flavor Technology	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

First Year

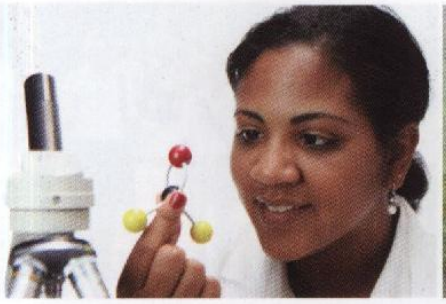
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BS 1001	General Chemistry	3
BS 1002	General Chemistry Laboratory	1
BS 1005	Principles of Biology	3
BS 1006	Biology Laboratory	1
BS 1101	Calculus I for Bioscience	3
BS 1201	Physics for Bioscience	3
BS 1202	Physics Laboratory for Bioscience	1
GE 2101	World Civilization	3
	Total	***21***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1201	Statistics I	3
BS 1007	Organic Chemistry	3
BS 1008	Organic Chemistry Laboratory	1
BS 1102	Calculus II for Bioscience	3
GE 1201	General Psychology	3
SC 2151	Introduction to Microcomputer Application	3
	Total	***19***







Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2403	Introduction to Economics	3
BS 2004	Analytical Chemistry	3
BS 2005	Analytical Chemistry Laboratory	1
BS 2006	Basic Biochemistry	3
BS 2007	Basic Biochemistry Laboratory	1
BS 2013	Engineering Drawing for Bioscience	1
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
AI 3202	Introduction to Agro-Industry	2
BG 2001	English IV	3
BS 2008	Physical Chemistry	3
BS 2011	Introduction to Microbiology	3
BS 2012	Genetics	3
BT 2011	Introduction to Biotechnology	3
GE 2202	Ethics	3
	Total	***20***

Third Year
First Semester

Course Code	Course Title	Credits
AI 3201	Biological Material and Biodegradation	3
AI 3204	Processing of Agricultural Products I	3
BT 3013	Introduction to Bioprocessing Engineering	3
BT 3015	Industrial Fermentation	3
	One Major Elective Course	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
AI 3203	Instrumentation and Control in Agro-Industrial Process	3
AI 3205	Biochemical Engineering	3
AI 3207	Unit Operation of Agro-Industry I	3
AI 3208	Standards and Regulations of Agricultural Products	2
AI 4208	Processing of Agricultural Products II	3
BT 3016	Enzyme Technology	3
	Total	***17***





Fourth Year
First Semester

Course Code	Course Title	Credits
AI 3206	Agro-Industry Management and Marketing	3
AI 4209	Unit Operation for Agro-Industry II	3
AI 4211	Fermentation Process	3
AI 4213	Agro-Industrial Quality Control	3
AI 4294	Internship	Non-credit (300 Hours)
BT 3017	Principles of Research	3
	Total	***15***

Second Semester

Course Code	Course Title	Credits
AI 4218	Agro-Industrial Product Development	3
AI 4290	Special Project	3
AI 4291	Field Trip	1
AI 4292	Seminar	1
	Two Major Elective Courses	6
	Total	***14***







DEPARTMENT OF FOOD TECHNOLOGY

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Possess good moral and ethics, socially and professionally.
- Aware of laws, standards and regulations concerning foods and agricultural products.
- Understand food components, their characteristics and properties, the changes of food components during processing and storage, and selection of suitable analyzing method to determine those food components.
- Understand the principles underlying food safety and food microbiology, development of quality assurance plan for safety food production and food plant sanitation.
- Understand the principles used in preservation, engineering, processing and packaging of the foods and the application of the knowledge in order to develop suitable food production process.
- Possess analysis skills in food chemistry, food safety and food plant sanitation as well as food processing to control and assure of the quality food.
- Experiment and analyze the problems related to assessment of physical and sensory qualities of the foods.
- Able to work with different groups of people in the food industries and related fields.
- Able to use information technology in searching for information, communication, and presentation of ideas effectively.

COURSES

A. General Education Courses **30 Credits**

Language Courses **12 Credits**

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3

Social Science Courses ***6 Credits***

BG 2403	Introduction to Economics	3
GE 2202	Ethics	3

Humanities Courses ***6 Credits***

GE 1202	General Psychology	3
GE 2101	World Civilization	3

Science and Mathematics Courses ***6 Credits***

BG 1201	Statistics I	3
SC 2151	Introduction to Microcomputer Application	3

B. Specialized Courses **106 Credits**

Core Courses **55 Credits**

BS 1001	General Chemistry	3
BS 1002	General Chemistry Laboratory	1
BS 1005	Principles of Biology	3
BS 1006	Biology Laboratory	1
BS 1007	Organic Chemistry	3
BS 1008	Organic Chemistry Laboratory	1
BS 1101	Calculus I for Bioscience	3
BS 1102	Calculus II for Bioscience	3
BS 1201	Physics for Bioscience	3
BS 1202	Physics Laboratory for Bioscience	1
BS 2004	Analytical Chemistry	3
BS 2005	Analytical Chemistry Laboratory	1
BS 2006	Basic Biochemistry	3
BS 2007	Basic Biochemistry Laboratory	1
BS 2008	Physical Chemistry	3
BS 2011	Introduction to Microbiology	3
BS 2012	Genetics	3
BS 2013	Engineering Drawing for Bioscience	1

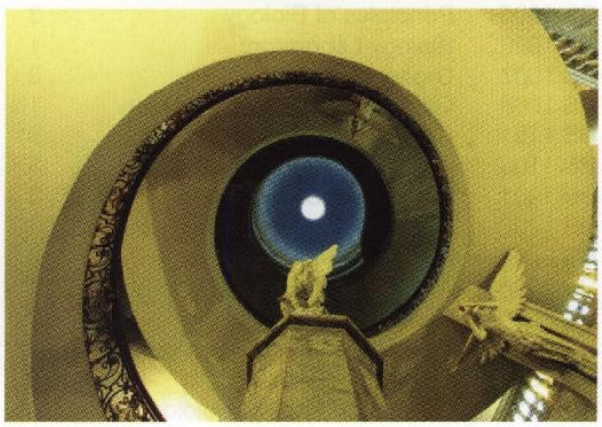




BT 2011	Introduction to Biotechnology	3
BT 3013	Introduction to Bioprocessing Engineering	3
BT 3015	Industrial Fermentation	3
BT 3016	Enzyme Technology	3
BT 3017	Principles of Research	3

Major Required Courses ***42 Credits***

AI 3208	Standards and Regulations of Agricultural Products	2
FT 3101	Introduction to Food Technology	2
FT 3102	Food Engineering	3
FT 3103	Food Microbiology	3
FT 3104	Human Nutrition	3
FT 3106	Industrial Food Processing I	3
FT 3108	Food Chemistry I	3
FT 3109	Food Chemistry II	3
FT 4108	Industrial Food Processing II	3
FT 4110	Food Marketing and Management	3
FT 4112	Food Quality Control	3
FT 4113	Food Product Development	3
FT 4123	Food Sanitation	3
FT 4190	Special Project	3
FT 4191	Field Trip	1
FT 4192	Seminar	1
FT 4194	Internship (300 Hours)	Non-credit

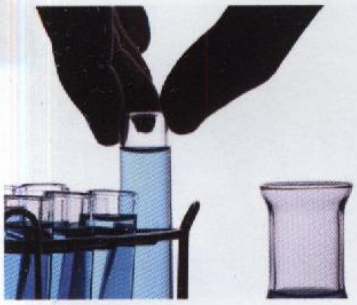


Major Elective Courses ***9 Credits***

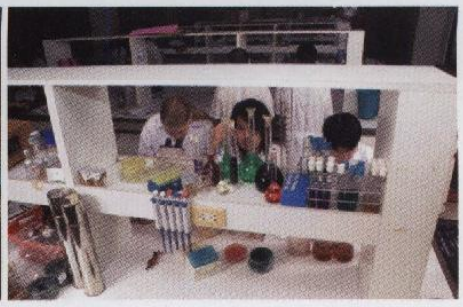
AI 3201	Biological Material and Biodegradation	3
AI 3205	Biochemical Engineering	3
AI 4211	Fermentation Process	3
AI 4219	Sugar Technology	3
AI 4220	Post Harvest Technology	3
AI 4221	Alcoholic Beverage Technology	3
AI 4222	Water and Waste Management	3
AI 4223	Waste and By-product Utilization	3
BS 4001	Ecology, Conversation and Environmentalism	3
BT 3014	Microbial Physiology	3
BT 3018	Genetic Engineering	3
FT 4114	Bakery Technology	3
FT 4115	Fruit and Vegetable Technology	3
FT 4116	Food Toxicology	3
FT 4117	Dairy Technology	3
FT 4120	Food Additive	3
FT 4121	Meat Poultry and Fishery Technology	3
FT 4122	Confectionery Technology	3
FT 4124	Lipid Technology	3
FT 4125	Beverage Technology	3
FT 4126	Food Packaging	3
FT 4127	Cereal Technology	3
FT 4131	Selected Topic	3
FT 4132	Color and Flavor Technology	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).







STUDY PLAN

First Year
First Semester

Course Code	Course Title	Credits
BG 1001	English I	3
BS 1001	General Chemistry	3
BS 1002	General Chemistry Laboratory	1
BS 1005	Principles of Biology	3
BS 1006	Biology Laboratory	1
BS 1101	Calculus I for Bioscience	3
BS 1201	Physics for Bioscience	3
BS 1202	Physics Laboratory for Bioscience	1
GE 2101	World Civilization	3
	Total	***21***

Second Semester

Course Code	Course Title	Credits
BG 1002	English II	3
BG 1201	Statistics I	3
BS 1007	Organic Chemistry	3
BS 1008	Organic Chemistry Laboratory	1
BS 1102	Calculus II for Bioscience	3
GE 1202	General Psychology	3
SC 2151	Introduction to Microcomputer Application	3
	Total	***19***

Second Year
First Semester

Course Code	Course Title	Credits
BG 2000	English III	3
BG 2403	Introduction to Economics	3
BS 2004	Analytical Chemistry	3
BS 2005	Analytical Chemistry Laboratory	1
BS 2006	Basic Biochemistry	3
BS 2007	Basic Biochemistry Laboratory	1
BS 2013	Engineering Drawing for Bioscience	1
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
BG 2001	English IV	3
BS 2008	Physical Chemistry	3
BS 2011	Introduction to Microbiology	3
BS 2012	Genetics	3
BT 2011	Introduction to Biotechnology	3
FT 3101	Introduction to Food Technology	2
GE 2202	Ethics	3
	Total	***20***





Third Year
First Semester

Course Code	Course Title	Credits
BT 3013	Introduction to Bioprocessing Engineering	3
BT 3015	Industrial Fermentation	3
FT 3103	Food Microbiology	3
FT 3106	Industrial Food Processing I	3
FT 3108	Food Chemistry I	3
	One Free Elective Course	3
	Total	***18***

Second Semester

Course Code	Course Title	Credits
AI 3208	Standards and Regulations of Agricultural Products	2
BT 3016	Enzyme Technology	3
FT 3102	Food Engineering	3
FT 3104	Human Nutrition	3
FT 3109	Food Chemistry II	3
FT 4108	Industrial Food Processing II	3
	Total	***17***

Fourth Year
First Semester

Course Code	Course Title	Credits
BT 3017	Principles of Research	3
FT 4110	Food Marketing and Management	3
FT 4112	Food Quality Control	3
FT 4194	Internship (300 Hours)	Non-credit
	Two Major Elective Courses	6
	Total	***15***

Second Semester

Course Code	Course Title	Credits
FT 4113	Food Product Development	3
FT 4123	Food Sanitation	3
FT 4190	Special Project	3
FT 4191	Field Trip	1
FT 4192	Seminar	1
	One Major Elective Course	3
	Total	***14***

MONTFORT DEL ROSARIO OF ARCHITECTURE AND DESIGN

Curriculum Structure

Courses	Architecture	Interior Architecture	Interior Design	Product Design
A. General Education Courses	30	30	30	30
- Language Courses	15	15	15	15
- Social Science Courses	3	3	3	3
- Humanities Courses	6	6	6	6
- Science and Mathematics Courses	6	6	6	6
B. Specialized Courses	129	129	101	101
- Core Courses	36	36	18	18
- Major Required Courses	57	57	80	77
- Major Elective Course	6	6	3	6
- Minor Required Courses	30	30	-	-
C. Free Elective Courses	6	6	6	6
Total Credits	*165*	*165*	*137*	*137*





OBJECTIVES

To produce graduates who:

- Possess architectural knowledge and skills sufficient to assume architectural leadership position in developing the society and the country, with professional responsibility.
- Are able to take their leading roles in rendering architectural services and development with science and technology knowledge as well as culture and arts conservation.
- Posses Professional ethics that will lead to architectural enhancement and approval of the society.

GRADUATION REQUIREMENTS

Assumption University confers the degree of Bachelor of Architecture / Bachelorof Fine and Applied Arts upon students who meet all the requirements as follows:

- Have completed the total number of credits of the curriculum
- Have obtained a cumulative Grade Point Average of at least 2.00
- Have participated in 16 sessions of the Professional Ethics Seminar
- Have obtained library and financial clearance from the university
- Have demonstrated good behavior and discipline



DEPARTMENT OF ARCHITECTURE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Possess professional ethics that will lead to architectural enhancement and approval of the society.
- Possess architectural knowledge and skills sufficient to assume architectural leadership position in developing the society and the country, with professional responsibility.
- Initiate research, analyze and critically evaluate solutions to formulate conclusions relating to architectural design.
- Able to take their leading roles in rendering architectural services and work constructively and productively within an interdisciplinary environment.
- Effectively communicate by using a variety of oral, written and IT skills
- Have dexterity in freehand drawing, architecture drafting, delineation and three dimensional model making.
- Demonstrate integrated marketing communication skills in relation to architecture and design.

COURSES

A. General Education Courses **30 Credits**

Language Courses 15 Credits

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3

Social Science Courses ***3 Credits***

MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GS 1004	Art of Delineation	3
GS 1005	Graphic Presentation	3

Science and Mathematics Courses ***6 Credits***

GS 1008	Applied Mathematics	3
GE 1301	Environment Science	3

B. Specialized Courses **129 Credits**

Core Courses ***36 Credits***

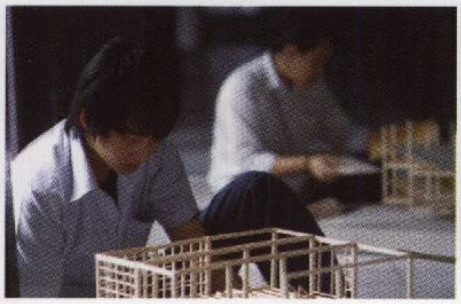
AR 1102	Visual Studies and Communication	3
AR 1104	Fundamentals of Architectural Design	3
AR 1106	Architectural Drawing	3
AR 1107	Introduction to Creative Culture	3
AR 2106	History of Architecture I	3
AR 2109	Building Technology and Construction I	3
AR 2110	Building Technology and Construction II	3
AR 3101	Introduction to Computer – Aided Design	3
AR 3106	Building Environmental Control I	3
AR 3107	Building Environmental Control II	3
AR 4101	History of Thai Architecture	3
AR 4106	Methods of Research and Data Processing	3

Major Required Courses ***57 Credits***

AR 2202	Architectural Design I	6
AR 2204	Architectural Design II	6
AR 3200	Theory and Concept in Architecture	3
AR 3203	Architectural Design III	6
AR 3207	Architectural Design IV	6
AR 4203	Architectural Design V	6
AR 4205	Architectural Design VI	6
AR 5200	Pre-Thesis in Architecture	3
AR 5203	Architectural Design VII	6
AR 5205	Thesis in Architecture	9

Major Elective Courses ***6 Credits***

AR 5401	Building Cost Estimation and Control	3
AR 5402	Fundamentals of Architecture and Urban Conservation	3
AR 5403	Advanced Computer - Aided Design	3
AR 5404	Construction Management	3
AR 5405	Individual Study in Architecture	3
AR 5407	Real Estate Development	3
AR 5409	Architectural Psychology	3
AR 5410	Thai Architecture	3
AR 5413	Project Management	3
AR 5414	Energy Saving	3
AR 5415	Interactive Features Design	3
AR 5416	Façade Design in Architecture	3
AR 5417	Interior Design by Architects	3
AR 5418	Introduction to Exhibition Design	3
AR 5419	Special Topics in History, Theory and Technology in Architecture	3
AR 5420	Lighting, Perception and Culture	3





Minor Required Courses		***30 Credits***
AR 2303	Structural Analysis	3
AR 2304	Structural Design	3
AR 2305	History of Architecture II	3
AR 3307	Building Technology and Construction III	3
AR 3308	Building Technology and Construction IV	3
AR 3309	Architectural Design Methods	3
AR 3310	Fundamentals of Site and Landscape Planning	3
AR 4301	Fundamentals of Urban and Regional Planning	3
AR 4302	Seminar in Architecture	3
AR 4303	Practicum in Architecture	Non-credit (240 Hours)
AR 5300	Professional Ethics and Practices	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	Credits
AR 1102	Visual Studies and Communication	3
AR 1106	Architectural Drawing	3
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
GS 1006	General Calculus	3
GS 1008	Applied Mathematics	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 1104	Fundamentals of Architectural Design	3
AR 1107	Introduction to Creative Culture	3
BG 1002	English II	3
MGT 1101	Introduction to Business	3
GS 1005	Graphic Presentation	3
GE 1301	Environment Science	3
	Total	***18***





SECOND YEAR
First Semester

Code	Subjects	Credits
AR 2106	History of Architecture I	3
AR 2109	Building Technology and Construction I	3
AR 2202	Architectural Design I	6
AR 2303	Structural Analysis	3
BG 2000	English III	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 2110	Building Technology and Construction II	3
AR 2204	Architectural Design II	6
AR 2304	Structural Design	3
AR 2305	History of Architecture II	3
BG 2001	English IV	3
	Total	***18***

THIRD YEAR
First Semester

Code	Subjects	Credits
AR 3101	Introduction to Computer – Aided Design	3
AR 3106	Building Environmental Control I	3
AR 3203	Architectural Design III	6
AR 3307	Building Technology and Construction III	3
AR 3309	Architectural Design Methods	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 3107	Building Environmental Control II	3
AR 3200	Theory and Concept in Architecture	3
AR 3207	Architectural Design IV	6
AR 3308	Building Technology and Construction IV	3
AR 3310	Fundamentals of Site and Landscape Planning	3
	Total	***18***



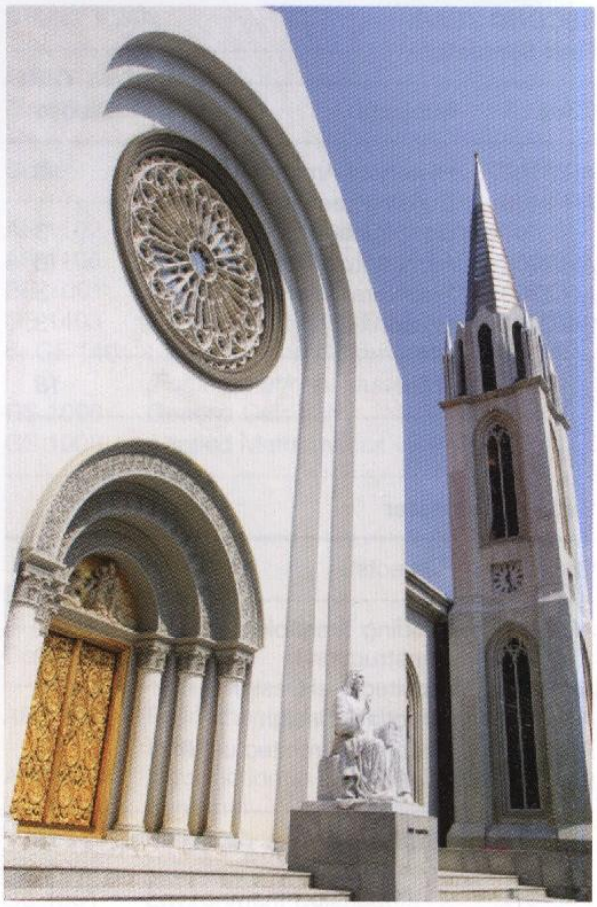


FOURTH YEAR
First Semester

Code	Subjects	Credits
AR 4101	History of Thai Architecture	3
AR 4203	Architectural Design V	6
AR 4301	Fundamentals of Urban and Regional Planning	3
AR 4302	Seminar in Architecture	3
	Total	***15***

Second Semester

Code	Subjects	Credits
AR 4106	Methods of Research and Data Processing	3
AR 4205	Architectural Design VI	6
AR 4303	Practicum in Architecture	-
	One Free Elective Course	3
	One Major Elective Course	3
	Total	***15***



FIFTH YEAR
First Semester

Code	Subjects	Credits
AR 5200	Pre-Thesis in Architecture	3
AR 5203	Architectural Design VII	6
	One Free Elective Course	3
	One Major Elective Course	3
	Total	***15***

Second Semester

Code	Subjects	Credits
AR 5205	Thesis in Architecture	9
AR 5300	Professional Ethics and Practices	3
	Total	***12***





DEPARTMENT OF INTERIOR ARCHITECTURE

OBJECTIVES

To produce graduates who have the characteristics, knowledge and skills as follows:

- Develop moral character and possess professional ethics accepted and approved by the society.
- Understand interior architecture theories and possess techniques developed through the systematic and efficient creative thinking process as well as professional responsibility sufficient to assume the role of interior architects in the development of industry, society and the country.
- Able to innovate and transform creative concepts through systematic analysis and considerations of related theories to the spatial visualization.
- Able to render interior architecture services in the milieu of science and technology while adhering to preservation of arts and culture.
- Able to contribute to a team work among designers and others with the same level of competency and aspiration in order to function creatively while maintaining a healthy competitive environment.
- Have creativity and presentation skills via computer applications and logical schema.
- Have dexterity in freehand drawing, interior architecture drafting, delineation and three dimensional model making.

COURSES

A. General Education Courses **30 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3

Social Science Courses ***3 Credits***

MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GS 1004	Art of Delineation	3
GS 1005	Graphic Presentation	3

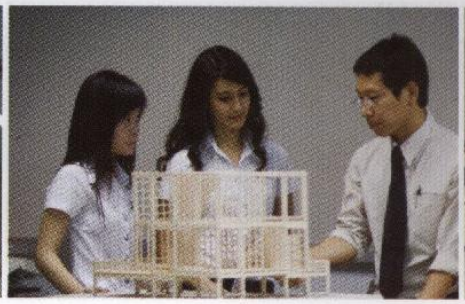
Science and Mathematics Courses ***6 Credits***

GS 1008	Applied Mathematics	3
GE 1301	Environment Science	3

B. Specialized Courses **129 Credits**

Core Courses ***36 Credits***

AR 1102	Visual Studies and Communication	3
AR 1104	Fundamentals of Architectural Design	3
AR 1106	Architectural Drawing	3
AR 1107	Introduction to Creative Culture	3
AR 2106	History of Architecture I	3
AR 2109	Building Technology and Construction I	3
AR 2110	Building Technology and Construction II	3
AR 3101	Introduction to Computer – Aided Design	3
AR 3106	Building Environmental Control I	3
AR 3107	Building Environmental Control II	3
AR 4101	History of Thai Architecture	3
IN 4102	Methods of Research and Data Processing	3


Major Required Courses ***57 Credits***

IN 2202	Interior Architectural Design I	6
IN 2204	Interior Architectural Design II	6
IN 3200	Theory and Concept in Interior Architecture	3
IN 3203	Interior Architectural Design III	6
IN 3207	Interior Architectural Design IV	6
IN 4203	Interior Architectural Design V	6
IN 4205	Interior Architectural Design VI	6
IN 5200	Pre-Thesis in Interior Architecture	3
IN 5203	Interior Architectural Design VII	6
IN 5205	Thesis in Interior Architecture	9

Major Elective Courses ***6 Credits***

IN 5400	Elements of Thai Architecture	3
IN 5401	Interior Architecture Cost Estimation and Control	3
IN 5403	Advanced Computer - Aided Design	3
IN 5404	Individual Study in Architecture	3
IN 5411	Advanced Lighting	3
IN 5413	Facilities Management	3
IN 5415	Fabric design and Applications	3
IN 5416	Introduction to Exhibition Design	3
IN 5417	Arts Appreciation	3

Minor Required Courses ***30 Credits***

IN 2305	Interior Architectural Design Methods	3
IN 2306	History of Interior Architecture	3
IN 3301	Interior Construction Technology I	3
IN 3303	Interior Construction Technology II	3
IN 3304	Lighting Design	3
IN 3305	Furniture Design	3
IN 3306	Interior Material Application	3
IN 4304	Practicum in Interior Architecture (240 Hours)	Non-credit
IN 4305	Seminar in Interior Architecture	3
IN 4306	Furniture Production Method	3
IN 5300	Professional Ethics and Practices	3

C. Free Elective Courses ***6 Credits***

Students can take free elective courses of 6 credits which are offered by their faculty or by different faculties upon completion of the prerequisites.

STUDY PLAN

FIRST YEAR

First Semester

Code	Subjects	Credits
AR 1102	Visual Studies and Communication	3
AR 1106	Architectural Drawing	3
BG 1001	English I	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international students)*	3
GS 1004	Arts of Delineation	3
GS 1008	Applied Mathematics	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 1104	Fundamentals of Architectural Design	3
AR 1107	Introduction to Creative Culture	3
BG 1002	English II	3
GE 1301	Environment Science	3
GS 1005	Graphic Presentation	3
MGT 1101	Introduction to Business	3
	Total	***18***





SECOND YEAR

First Semester

Code	Subjects	Credits
AR 2106	History of Architecture I	3
AR 2109	Building Technology and Construction I	3
BG 2000	English III	3
IN 2202	Interior Architectural Design I	6
IN 2305	Interior Architectural Design Method	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 2110	Building Technology and Construction II	3
AR 3101	Introduction to Computer – Aided Design I	3
BG 2001	English IV	3
IN 2204	Interior Architectural Design II	6
IN 2306	History of Interior Architecture	3
	Total	***18***

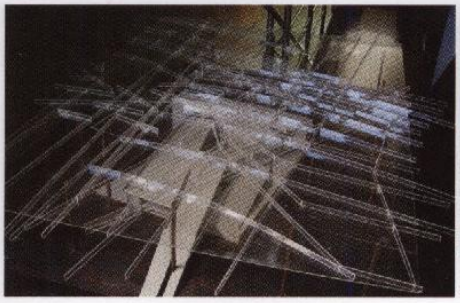
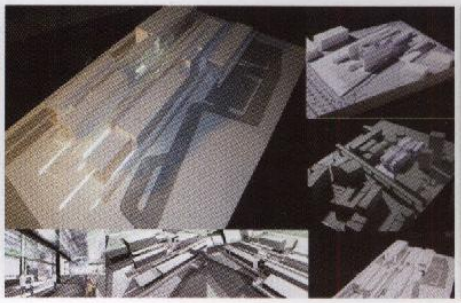
THIRD YEAR

First Semester

Code	Subjects	Credits
AR 3106	Building Environmental Control I	3
IN 3200	Theory and Concept in Interior Architecture	3
IN 3203	Interior Architectural Design III	6
IN 3301	Interior Construction Technology I	3
IN 3306	Interior Material Application	3
	Total	***18***

Second Semester

Code	Subjects	Credits
AR 3107	Building Environmental Control II	3
IN 3207	Interior Architectural Design IV	6
IN 3303	Interior Construction Technology II	3
IN 3304	Lighting Design	3
IN 3305	Furniture Design	3
	Total	***18***


FOURTH YEAR
First Semester

Code	Subjects	Credits
AR 4101	History of Thai Architecture	3
IN 4203	Interior Architectural Design V	6
IN 4305	Seminar in Interior Architecture	3
IN 4306	Furniture Production Methods	3
	Total	***15***

Second Semester

Code	Subjects	Credits
IN 4102	Methods of Research and Data Processing	3
IN 4205	Interior Architectural Design VI	6
IN 4304	Practicum in Interior Architecture	-
	One Free Elective Course	3
	One Major Elective Course	3
	Total	***15***

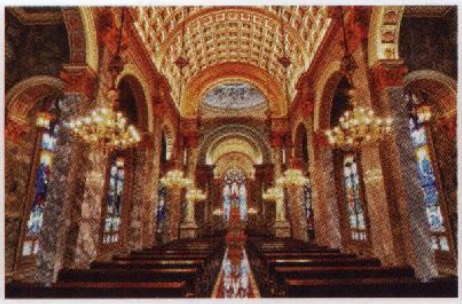
FIFTH YEAR
First Semester

Code	Subjects	Credits
IN 5200	Pre-Thesis in Interior Architecture	3
IN 5203	Interior Architectural Design VII	6
	One Free Elective Course	3
	One Major Elective Course	3
	Total	***15***

Second Semester

Code	Subjects	Credits
IN 5205	Thesis in Interior Architecture	9
IN 5300	Professional Ethics and Practices	3
	Total	***12***




BACHELOR OF FINE AND APPLIED ARTS PROGRAM
IN INTERIOR DESIGN

Objectives:

To produce graduates who have the characteristics, knowledge and skills as follows:

- Develop moral character and possess professional ethics accepted and approved by the society.
- Possess interior design theoretical knowledge, technical skills, entrepreneurial drive, and professional responsibility sufficient to assume leadership positions in the industry, society and the country.
- Confident in rendering interior design services in the milieu of science and technology while adhering to preservation of arts and culture.
- Know how to contribute to a team working among designers and others with the same level of competency and aspiration in order to function creatively while maintaining a healthy competitive environment.
- Have creativity and presentation skills via computer applications and logical schema.
- Have dexterity in freehand drawing, interior design drafting, delineation and 3 dimensional model making.

COURSES

A. General Education Courses — **30 Credits**

Language Courses — ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3

Social Science Courses — ***3 Credits***

MGT 1101	Introduction to Business	3

Humanities Courses — ***6 Credits***

GS 1004	Art of Delineation	3
GS 1005	Graphic Presentation	3

Science and Mathematics Courses — ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses — **101 Credits**

Core Courses — ***18 Credits***

IND 1101	Visual Design	3
IND 1102	Introduction to Design Culture and Trend	3
IND 2101	Design Methods	
IND 2102	Human Factors	3
IND 3101	Theory and Concept in Design	3
IND 3102	Design Research and Development	3

Major Required Courses — ***80 Credits***

IND 1301	Basic Drawing	3
IND 1302	Design Fundamentals	3
IND 1303	Computer Applications for Interior Design	3
IND 2201	Interior Design I	6
IND 2202	Interior Design II	6
IND 2301	History of Interior Design	3
IND 2302	Building Construction	3
IND 2303	Furniture Production and Fabrication Technology	3
IND 3201	Interior Design III	6
IND 3202	Interior Design IV	6
IND 3301	Interior Construction	3
IND 3302	Interior Material and Technology	3
IND 3303	Building System Study	3
IND 3304	Interior Design Proposal and Marketing	3
IND 3305	Practicum in Interior Design	2
IND 3306	Lighting Design	3
IND 4201	Interior Design V	6
IND 4202	Senior Project	6
IND 4301	Design Management	3
IND 4302	Individual Study in Interior Design	3
IND 4303	Professional Ethics and Practice	3





Major Elective Courses ***6 Credits***

IND 4401	Seminar in Interior Design	3
IND 4402	Advanced Computer-Aided Design	3
IND 4403	Model Making and 3D Exploration	3
IND 4404	Home Textiles and Soft Furnishing	3
IND 4405	Thai Architecture Study	3
IND 4406	Advanced Lighting	3
IND 4407	Decorative Art	3

C. Free Elective Courses ***6 Credits***

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

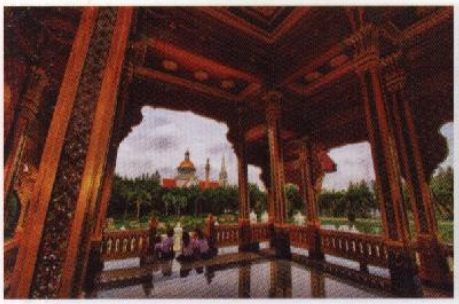
FIRST YEAR

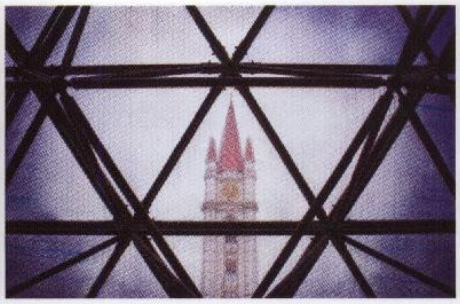
First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international Students)*	3
GS 1004	Art of Delineation	3
IND 1101	Visual Design	3
IND 1301	Basic Drawing	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
GE 1301	Environmental Science	3
GS 1005	Graphic Presentation	3
IND 1102	Introduction to Design Culture and Trend	3
IND 1302	Design Fundamentals	3
IND 1303	Computer Application for Interior Design	3
	Total	***18***





SECOND YEAR
First Semester

Code	Subjects	Credits
BG 2000	English III	3
MGT 1101	Introduction to Business	3
IND 2101	Design Methods	3
IND 2201	Interior Design I	6
IND 2301	History of Interior Design	3
	Total	***18***

Second Semester

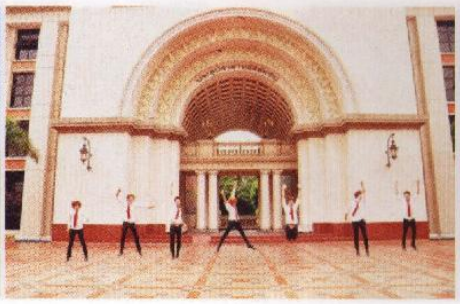
Code	Subjects	Credits
BG 2001	English IV	3
IND 2102	Human Factors	3
IND 2202	Interior Design II	6
IND 2302	Building Construction	3
IND 2303	Furniture Production and Fabrication Technology	3
	Total	18

THIRD YEAR
First Semester

Code	Subjects	Credits
IND 3101	Theory and Concept in Design	3
IND 3201	Interior Design III	6
IND 3301	Interior Construction	3
IND 3302	Interior Material and Technology	3
IND 3303	Building System Study	3
	Total	***18***

Second Semester

Code	Subjects	Credits
IND 3102	Design Research and Development	3
IND 3202	Interior Design IV	6
IND 3304	Interior Design Proposal and Marketing	3
IND 3305	Practicum in Interior Design	2
IND 3306	Lighting Design	3
	Free Elective Course	3
	Total	***20***


FOURTH YEAR

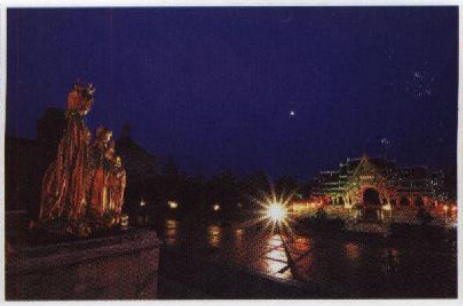
First Semester

Code	Subjects	Credits
IND 4201	Interior Design V	6
IND 4301	Design Management	3
IND 4302	Individual Study in Interior Design	3
	Major Elective Course	3
	Total	***15***

Second Semester

Code	Subjects	Credits
IND 4202	Senior Project	6
IND 4303	Professional Ethics and Practice	3
	Free Elective Course	3
	Total	***12***




BACHELOR OF FINE AND APPLIED ARTS PROGRAM
IN PRODUCT DESIGN

Objectives:

To produce graduates who have the characteristics, knowledge and skills as follows:

1. Possess personal, professional, and environmental ethics accepted and approved by the society.
2. Possess product design theoretical knowledge, technical skills, business navigation ability, and professional responsibility sufficient to assume leadership positions in the industry, society and the country.
3. Confident in rendering product design services achieved through creative thinking, problem solving, numerical analysis, and appropriate psychomotor skills in the milieu of science and technology while adhering to preservation of arts and culture.
4. Possess interpersonal skills and communication skills through the use of information technology, verbal and graphical tools necessary in collaborative environments.

COURSES

A. General Education Courses **30 Credits**

Language Courses ***15 Credits***

BG 1001	English I	3
BG 1002	English II	3
BG 2000	English III	3
BG 2001	English IV	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills (For international students)	3

Social Science Courses ***3 Credits***

MGT 1101	Introduction to Business	3

Humanities Courses ***6 Credits***

GS 1004	Art of Delineation	3
GS 1005	Graphic Presentation	3

Science and Mathematics Courses ***6 Credits***

BG 1200	Mathematics for Business	3
GE 1301	Environmental Science	3

B. Specialized Courses **101 Credits**

Core Courses ***18 Credits***

IND 1101	Visual Design	3
IND 1102	Introduction to Design Culture and Trend	3
IND 2101	Design Methods	3
IND 2102	Human Factors	3
IND 3101	Theory and Concept in Design	3
IND 3102	Design Research and Development	3

Major Required Courses ***77 Credits***

PD 1301	Technical Drawing	3
PD 1302	Design Principles	3
PD 1303	Computer Applications for Product Design	3
PD 2201	Product Design I	6
PD 2202	Product Design II	6
PD 2301	Model Making	3
PD 2302	History of Art and Design	3
PD 2303	History of Product Design	3
PD 3201	Product Design III	6
PD 3202	Product Design IV	6
PD 3301	Material and Manufacturing Processes I	3
PD 3302	Material and Manufacturing Processes II	3
PD 3303	Product Design and Marketing Principles	3
PD 3304	Product Design and Marketing Communication	3
PD 3305	Practicum in Product Design	2
PD 4201	Product Design V	6
PD 4202	Senior Project	6
PD 4301	Individual Study in Product Design	3
PD 4302	Design in Emerging Market	3
PD 4303	Professional Ethics	3





Major Elective Courses		*6 Credits*
PD 3401	User Interface Design	3
PD 3402	Graphic and Packaging Design	3
PD 3403	Experience Design for Exhibitions	3
PD 3404	Fashion and Textile Design	3
PD 3405	Jewelry Design	3
PD 3406	Toy and Play Design	3

C. Free Elective Courses **6 Credits**

Students can take free elective courses of 6 credits from any faculty in Assumption University upon completion of the prerequisites (if any).

STUDY PLAN

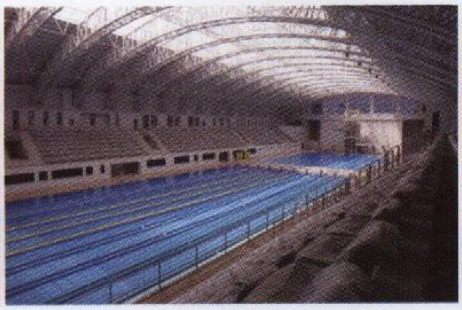
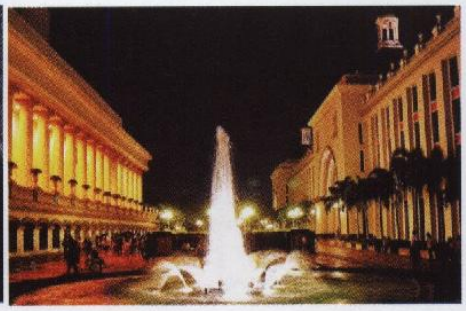
FIRST YEAR

First Semester

Code	Subjects	Credits
BG 1001	English I	3
BG 1200	Mathematics for Business	3
GE 1403	Communication in Thai	3
or GE 1401	Language and Communication Skills *(For international Students)*	3
GS 1004	Art of Delineation	3
IND 1101	Visual Design	3
PD 1301	Technical Drawing	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 1002	English II	3
GE 1301	Environmental Science	3
GS 1005	Graphic Presentation	3
IND 1102	Introduction to Design Culture and Trend	3
PD 1302	Design Principles	3
PD 1303	Computer Application for Product Design	3
	Total	***18***

SECOND YEAR

First Semester

Code	Subjects	Credits
BG 2000	English III	3
IND 2101	Design Methods	3
PD 2201	Product Design I	6
PD 2301	Model Making	3
PD 2302	History of Art and Design	3
	Total	***18***

Second Semester

Code	Subjects	Credits
BG 2001	English IV	3
IND 2102	Human Factors	3
PD 2202	Product Design II	6
PD 2303	History of Product Design	3
MGT 1101	Introduction to Business	3
	Total	***18***

THIRD YEAR

First Semester

Code	Subjects	Credits
IND 3101	Theory and Concept in Design	3
PD 3201	Product Design III	6
PD 3301	Material and Manufacturing Process I	3
PD 3303	Product Design and Marketing Principles	3
	Major Elective Course	3
	Total	***18***

Second Semester

Code	Subjects	Credits
IND 3102	Design Research and Development	3
PD 3202	Product Design IV	6
PD 3302	Material and Manufacturing Processes II	3
PD 3304	Product Design and Marketing Communication	3
PD 3305	Practicum in Product Design	2
	Major Elective Course	3
	Total	***20***





FOURTH YEAR

First Semester

Code	Subjects	Credits
PD 4201	Product Design V	6
PD 4301	Individual Study in Product Design	3
PD 4302	Design in Emerging Market	3
	Free Elective Course	3
	Total	***15***

Second Semester

Code	Subjects	Credits
PD 4202	Senior Project	6
PD 4303	Professional Ethics	3
	Free Elective Course	3
	Total	***12***

Institute for
English Language Education (IELE)

The IELE at Assumption University of Thailand envisions itself as the leading institute in English language education and research in Thailand known for its excellence with:

- qualified and professional instructors
- motivated and proficient students
- state-of-the-art courses and technologies
- an international teaching and learning environment





IELE VISION AND MISSION STATEMENTS

The IELE envisions Assumption University students as individuals who:

- Are linguistically competent and able to communicate effectively in English both in speech and in writing;
- Constantly seek to improve their English language competency;
- Are able to think critically and use English to perform successfully in society;
- Are able to function effectively in a multicultural society and professional environment.

The English courses offered by the IELE aim to enable the students:

- to acquire English language skills in reading, writing, listening and speaking
- to be exposed to World Englishes
- to be able to function successfully in a multicultural environment using English.



COURSES OFFERED

Intensive English Program (IEP) 0 credit

A preparatory English course for incoming freshman students exposing them to a variety of texts and patterns, while focusing on grammar and usage, in order to better prepare and place them in further English language courses

BG 0001, BG 0003Basic English I 0 credit

A foundation course developing basic language skills, adjusted to accommodate the learning pace of students with various English language backgrounds, as part of an environment that fosters creative and communicative learning to prepare the students for academic English language courses

BG 0002 Basic English II 0 credit

A foundation course developing basic language competence as part of an environment that fosters creative and communicative learning to prepare the students for academic English language courses

BG 1001 English I 3 credits

Lower intermediate academic English, with activities to foster reading, writing, listening and speaking skills in English through communicative activities in a meaningful academic context

BG 1002 English II 3 credits

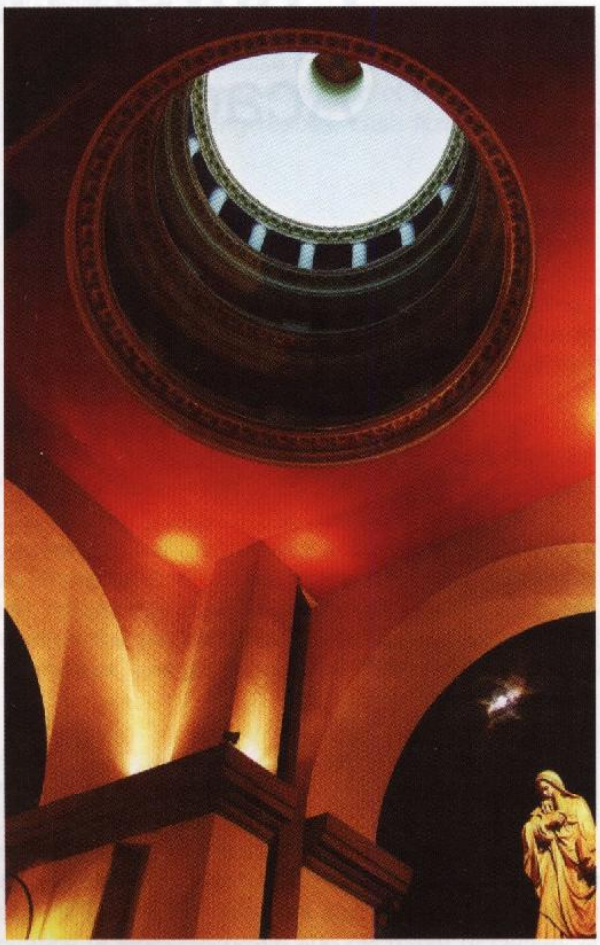
Prerequisite: *BG 1001 English I*
Intermediate academic English, reinforcing fluency and grammar with task-driven oral and writing exercises, developing vocabulary and sentence writing skills with combined reading comprehension exercises and writing practice

BG 2000 English III 3 credits

Prerequisite: *BG 1002 English II*
Advanced English for academic and career purposes, emphasizing organization of ideas and clarity of expression and understanding

BG 2001 English IV 3 credits

Prerequisite: *BG 2000 English III*
Advanced English for academic and career purposes, emphasizing critical and analytical skills, and formulating logical and coherent opinions



Course Description
Academic Year 2012

ACT 1600 **Fundamentals of Financial Accounting** **3 Credits**
Prerequisite: *For Martin de Tours School of Management Students*

Basic accounting conceptual framework, theory and procedures, definition, purpose, usefulness, limitation of accounting information including analysis of business transactions, using basic double-entry system in recording process to complete the accounting cycle: journalizing, posting to the ledgers and preparation of trial balance, adjusting entries, worksheets and closing entries, as well as special journals and preparation of basic financial statements and also including basic accounting theory pertaining to accounting for service and merchandising firms: cash, receivable, merchandise inventory, plant assets, natural resources, intangible assets, investments, liabilities, owner's equity, and principle of voucher system

ACT 1601 **Fundamentals of Financial Accounting** **3 Credits**

Basic accounting theory and procedures for service and merchandising firms by using double-entry system, completing accounting process: journalizing, posting to the ledgers, preparation of trial balance, adjusting entries, worksheet and closing entries, as well as preparation and presentation of basic financial statements.

ACT 1602 **Fundamentals of Financial Accounting I** **3 Credits**
Prerequisite: *(For Science & Technology Students)*

Basic accounting theory and procedures for service and merchandising firms by using double-entry system, completing accounting process: journalizing, posting to the ledgers, preparation of trial balance, adjusting entries, worksheet and closing entries, as well as preparation and presentation of basic financial statements.

ACT 1603 **Fundamentals of Financial Accounting II** **3 Credits**
Prerequisite: *ACT 1602 Fundamentals of Financial Accounting I*
(For Science & Technology Students)

Basic accounting theory pertaining to accounting for cash, receivable, merchandise inventory, plant assets, natural resources, intangible assets, investments, liabilities, owner's equity, principle and method of voucher system, as well as financial statements to portray corporate financial position, operating results, cash flows, and financial strength.

ACT 2620 **Fundamentals of Managerial Accounting** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*

Role that managerial accounting plays in servicing informational needs of managers in planning, organizing and controlling through study of systematic structuring of business decisions and identifying the information relevant to decision making, profit planning, cost-volume-profit analysis, responsibility accounting , preparation statement of cash flows and segment report

ACT 3602 **Intermediate Accounting I** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*

Accounting conceptual framework, accounting principles, practices and problems of accounting for assets: definition, classification, recognition, measurements, valuation, impairment of assets, presentation and disclosure of assets in statement of financial position, accounting for cash, marketable securities, notes receivable, accounts receivable, merchandise inventory, investments, tangible and intangible assets, natural resources, different methods of depreciation, difference between capital and revenue expenditure, and preparation and presentation of financial statements in detail and good format

ACT 3603 **Intermediate Accounting II** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*

Accounting principles and practices in accounting for current liabilities, non-current liabilities and owner's equity: definition, classification, recognition, measurements, valuation, presentation and disclosure on financial statements, accounting for partnership: organization, operation, dissolution, liquidation, financial statements preparation and presentation, accounting for corporation: organization, issuance of stock, increase and decrease of capital, additional paid-in capital, earnings per share, retained earnings, appropriated retained earnings, liquidation, and statements of change in shareholders' equity and retained earnings statement preparation and presentation, accounting for employee benefits, and accounting for lease

ACT 3606 **Public Sector and Fund Accounting** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*

System and procedure of governmental and state enterprise accounting, national budget system, government's financial management, national budget, financial funds, governmental and fund accounting systems, controlling function of the National Audit Council and the Comptroller General Department, national financial statements, accounting of municipalities and other government agencies, state enterprise accounting, fund accounting of foundations, and educational institutions

ACT 3608 **Financial Report and Financial Statement Analysis** **3 Credits**
Prerequisites: *ACT 2620 Fundamentals of Managerial Accounting*
FIN 3701 Corporate Finance

Reading and interpreting financial statements, analyzing, criticizing departmental financial matters, stockholders' equity, investment, capital expansion, and division of profit, analysis and interpretation of financial statements, techniques employed in financial statement analysis, presentation of reports to stockholders and interested public, the principles employed in analyzing assets from the viewpoint of investment, profitability and other factors that affect price of securities, forecasting and analysis of security market environment, and critical problem solving

ACT 3614 **Taxation I** **3 Credits**
Prerequisite: *BG 1401 Business Law II*

Factors relating to taxes paid by individuals and business enterprises: principles and features of taxation according to Revenue Codes; methods of various tax liability appraisal and collection such as personal income tax, corporate tax, business tax, custom, excise tax, duties and stamps, and other kinds of taxes involved in business

ACT 3615 **Taxation II** **3 Credits**
Prerequisites: *ACT 1600 Fundamentals of Financial Accounting*
ACT 3614 Taxation I

Types of business firms that must prepare accounting in compliance with law and regulations of Revenue Codes including the comparative study of preparing accounting based on Generally Accepted Accounting Principles and based on Revenue Codes, principles for determining income tax for both personal and corporate income taxes, withholding tax, value added tax, special business tax, custom, excise tax, duties and stamps, accounting principles for taxable revenue and expense, including valuation of assets and liabilities, and depreciation in calculation of taxable income and practical problems related to tax accounting

ACT 3622 **Cost Accounting** **3 Credits**
Prerequisite: *ACT 2620 Fundamentals of Managerial Accounting*

Cost concepts, cost terms, definition, importance and usefulness of cost accounting information for planning and controlling under certain and uncertain circumstances, cost accumulation, techniques in cost analysis, preparing production cost reports, accounting procedures for raw materials, labor and overhead costs as well as various cost accounting approaches: job-order accounting, process costing, joint-product and by-product costs, spoilage, waste, defect, and scrap, cost control by means of standard costs; analysis of variances; cost volume profit relationship; variable costing system; budgeting and planning; pricing and transfer price; and activity base costing

ACT 3623 **Cost Management** **3 Credits**
Prerequisite: *ACT 3622 Cost Accounting*

Cost concepts and scope of using cost accounting information for managerial planning and production control, analysis of costs for decision-making, including the use of such information for product pricing, mixed cost, absorption costing, direct costing, variable cost, fixed cost, cost volume-profit analysis, variance analysis, performance evaluation, transfer pricing, capital expenditure planning, manufacturing expenses control, measurement and control of various work units

ACT 3624 **Real Estate Accounting** **3 Credits**
Prerequisite: *ACT 3622 Cost Accounting*

Accumulation and selection of data; record analysis, and preparation in report format to conform to real estate accounting standard, laws and other pertinent laws of Thailand for investors, investment firms, housing projects, speculators, real estate agencies, condominium cooperatives, real estate developers and financial institution real estate portfolios, various expense allocation systems, analysis of variances against projected expenditures, including use of the case method

ACT 3625 **Hospital Accounting** **3 Credits**
Prerequisite: *ACT 3622 Cost Accounting*

Accumulating, recording, interpreting accounting data and preparation of reports on various hospital procedures (including medical service functions and institutions such as polyclinics and nursing homes) both for the public and private sectors of hospitals, and rules and regulations governing the accounting of health services in Thailand

ACT 3626 **Hotel Accounting** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*

Accumulation of data and preparation of reports on the performance of various hotel functions: room rentals, food and beverage, including indoor, banquet and outdoor catering, entertainment, laundry and other services, foreign exchange, arcade rental income and other franchise income such as limousine rentals, parking, exhibition stalls, sauna and health clubs, massage parlors, sports centers, control systems, periodical performance appraisals and analysis of variances for corrective action

ACT 3629 **Profit Planning and Control** **3 Credits**
Prerequisite: *ACT 2620 Fundamentals of Managerial Accounting*

Process in preparing budgets for managerial planning and control: procedures for various types of budgets such as cash budgeting, capital budgeting, sales budgets, production budgets, interrelationship among budgets, cost-volume-profit analysis and other related topics

ACT 3643 **Auditing** **3 Credits**
Prerequisite: *ACT 3602 Intermediate Accounting I*
or *ACT 3603 Intermediate Accounting II*

Auditing conceptual framework, standards, law and professional acts, roles and responsibilities of external auditors, accepting auditing jobs, professional ethics and accountability, audit planning, fraud and errors in auditing process, auditing reports and procedures: assets, liabilities, owners' equity, revenue and expenses, internal control, risk assessments, risk control as well as audit decision making and evidence accumulation, preparation of working paper, auditor's report, and guidelines on auditing by computer

ACT 3644 **Internal Control and Audit** **3 Credits**
Prerequisite: *ACT 3602 Intermediate Accounting I*
or *ACT 3603 Intermediate Accounting II*

Performance of an internal audit in terms of an independent appraisal function which serves to examine and evaluate the adequacy and effectiveness of an organization's system on internal control and its overall quality of performance, furnishing top management with analysis, appraisals, recommendations, counsel, and information concerning the activities audited, internal auditing process, internal auditing skills, management control and information technology, and audit environment

ACT 4605 **International Accounting** **3 Credits**
Prerequisite: *ACT 1600 Fundamentals of Financial Accounting*
ACT 2620 Fundamentals of Managerial Accounting

Accumulation and recording of accounting data for business firms with multinational presence, including analysis and reporting of these by function, products, product lines and by country/location for proper presentation of operational results to top management, and update of International Financial Reporting Standard- -IFRS , interpretation of IFRS and accounting applied in Asian countries

ACT 4607 **Advanced Accounting I** **3 Credits**
Prerequisites: *ACT 3602 Intermediate Accounting I*
ACT 3603 Intermediate Accounting II

Specific accounting procedures: joint venture, consignment sale, installment sale, real estate, construction contract, funds accounting, not for profits organization, home office and branch accounting for both domestic and foreign countries, accounting procedures regarding currency exchange, accounting policy, change in accounting estimate, correction of errors, and preparation of financial statements from incomplete records

ACT 4608 **Advanced Accounting II** **3 Credits**
Prerequisites: *ACT 3602 Intermediate Accounting I*
ACT 3603 Intermediate Accounting II

Accounting principles and methods for business combination, investment in associated and subsidiary companies, preparation of consolidated financial statements, statement of realization and liquidation, accounting for statement of affairs, receiverships, accounting for foreign currency translation, accounting for trouble debt restructuring, preparation statement of change in stockholders' equity, comprehensive income statements, and statement of cash flows for both separated and consolidated statements

ACT 4609 **Accounting Theory** **3 Credits**
Prerequisites: *ACT 3602 Intermediate Accounting I*
ACT 3603 Intermediate Accounting II

Evolution, structure, and concept of accounting, emphasis on comprehensive theories with reference to design of holistic accounting systems, definitions and nature of the accounting and accounting theories, theory verification, accounting history, alternative accounting theories and the role of theories in financial accounting and standard setting in assets, liabilities, owner's equity, revenues including information disclosure in financial statements preparation

ACT 4611 **Seminar in Accounting** **3 Credits**
Prerequisite: *ACT 4607 Advanced Accounting I*

Discussion and analysis of using accounting conceptual framework and standards as guidelines for practice, contemporary, new, current, interesting accounting issues, updating new accounting standards, rules, regulations related to generally accepted accounting principles in both international and national levels, concepts and principles of code of conduct, code of best practice, and code of accounting professional ethics, practical problems in field of financial accounting, managerial accounting and related field, using case study, academic paper, article, and field research

ACT 4612 **Independent Study** **3 Credits**
Prerequisite: *Senior standing (Accounting Major)*

Application of theoretical concepts to the real problems of any organization in a selected industry in Thailand. A specific area of concentration will be chosen by students upon consultation with an instructor in the Department of Accounting. A written report must be submitted and a presentation must be made

ACT 4624 **Seminar in Management Accounting** **3 Credits**
Prerequisite: *ACT 3623 Cost Management*

Problems concerning the cost accounting system design, relationship, understanding, and cooperation from other work units involved in data collection and analysis for the purpose of designing a cost accounting system, as well as problems arising from the application of cost accounting concepts to various work systems

ACT 4641 **Problems in Auditing** **3 Credits**
Prerequisite: *ACT 3643 Auditing*

Practices and problems in auditing, use of accounting principles in auditing financial statements, patterns for different types of industries, and statements of certified public accountant institutes that often raise important problems for accountants to consider, using case study analysis in teaching and learning

ACT 4643 **Seminar in Auditing** **3 Credits**
Prerequisite: *ACT 4641 Problems in Auditing*

Review of auditing problems, principles and practices in auditing accounts, legal aspects in auditing, and other related topics including the current issues related to auditing

ACT 4646 **Accounting Information Systems** **3 Credits**
Prerequisites: *ACT 3643 Auditing*
ACT 3644 Internal Control and Audit

Nature, elements and procedures of the accounting information system including the rational data base concepts and design, system development and documentary techniques as well as the computer based information systems controls, computer fraud and its security, the design of data flow diagrams and system flowchart, accounting cycle of various transactions such as revenue, expenditure and production cycle, payroll cycle and reporting system

ACT 4647 **Accounting Software Package** **3 Credits**
Prerequisites: *ACT 4646 Accounting Information Systems*
BIS 2180 Information Technology

Utilization of computer software applications in accounting, including the systems of general ledger, budgeting, purchasing, selling, inventory, payroll, financial reporting and other means of reports, process of using software applications from the designing of the chart of accounts, entering data, as well as the construction of financial and management reports available for the needs of management for decision-making

ACT 4648 **EDP Auditing** **3 Credits**
Prerequisites: *ACT 3643 Auditing*
BIS 2180 Information Technology

Professional auditing work in terms of examining and analyzing computerized financial and non-financial operations in an enterprise to ensure the integrity and reliability of the computerized systems, understanding and appreciation of fundamental concepts of EDP audit, computer audit tools and techniques used in EDP audit, importance of control and audit of mini- and micro-computer systems, EDP controls, and concurrent auditing techniques.

ACT 4649 **Accounting Internship (135 Hours)** **3 Credits**
Prerequisites: *Senior standing (Accounting Major)*
Completion of at least 100 credits

Accounting field work practice in organization of at least 135 hours, providing opportunity to students to gain knowledge and skills from the real-world of Accounting profession, application of accounting theory and concept, enhancing competencies in analyzing, synthesizing and problem solving in accounting profession under the actual situation

AD 3101 **Principles of Marketing Communication** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

General characteristics in communication and marketing communication process, including the analysis of structure, principles, and the relations of advertising, public relations, sales promotion, sales personnel and independent marketing.

AD 3102 **Advertising Media Planning** **3 Credits**
Prerequisite: *CA 2018 Consumer Insight*

Media selection that focuses on the quality and benefit of media suited to the purpose, types of target audience, timing and media cost in buying efficiently, including survey of strategies of advertising media planning, creative media purchase, evaluation of assessment, frequency and rates to reach the target audience, and market share.

AD 3103 **Advertising Creative Strategy** **3 Credits**
Prerequisite: *CA 2018 Consumer Insight*

Communication management and creation of advertisement for print, radio and television broadcasting, development of advertising from definition to creation of advertising strategy, from creative strategy to advertising execution with emphasis on print, radio, television, film and poster.

AD 3106 **Art Direction** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Art direction, development of basic art skills, its impact in terms of color combination, layout format, typography and visual composition in both print and TV on effective advertising.

AD 3112 **Brand Communication** **3 Credits**
Prerequisite: *AD 3101 Principles of Marketing Communication*

Theories and principles of brand communication, brand positioning and repositioning, brand equity measurement, brand leverage and integrated brand communications, including current topics of branding.

AD 3113 **Customer Relationship Management** **3 Credits**
Prerequisite: *AD 3101 Principles of Marketing Communication*

Theories, practices, and applications of direct database and e-commerce marketing strategies, consumer and business-to-business marketing, integration of online and offline marketing strategies, and management of customer relationships.

AD 3114 **Interactive Advertising and Marketing Communication** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Implementation of interactive advertising and marketing communication, including the identification and analysis of interactive models, method to utilize the new media to gain interactivity which is an enhancement of the involvement the consumers have in advertising.

AD 3115 **International Communication Campaign** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Issues of international and cross cultural communication campaign, overview of cultural, economic, legal, political and social conditions relevant to international communication.

AD 3116 **Account Planning** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Roles of account planning in advertising agency in terms of aligning strategy throughout the advertising process, preparing advertising related documents such as advertising brief, presentation, and budget allocation.

AD 3117 **Advertising and Popular Culture** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Development of advertising in relations to culture and popular culture, ideologies and values based on cultural aspects in advertising, including influence of advertising on consumers and vice versa.

AD 3118 **Selected Topics in Advertising** **3 Credits**
Prerequisite: *CA 2004 Introduction to Advertising*

Exploration and analysis of selected topics in advertising. The topic will be announced semester by semester.

AD 3119 **Advertising and Marketing Communication Research** **3 Credits**
Prerequisite: *CA 3011 Communication Arts Research*

Various roles of advertising and marketing communication research in advertising and brand communication, implication of research methodology and process, including conducting quantitative and qualitative research as part of campaign planning.

AD 4100 **Seminar in Advertising** **3 Credits**

Facts and conditions in relation to problems, concerns and ethical issues in advertising, trends and new possibilities of advertising as communication tools, including analyzing the current situations and proposing possible solutions or opportunities for such situations.

AD 4101 **Advertising Workshop I** **3 Credits**
Prerequisites: *CA 3011 Communication Arts Research*
AD 3101 Principles of Marketing Communication
Co-requisite: *AD 4104 Advertising and Marketing Communication Management*

Training in advertising and communication planning through the study of marketing trends, analysis of data, planning of marketing promotion. Students will be trained to work as advertising agency under the supervision of the instructor.

AD 4102 **Advertising Workshop II** **3 Credits**
Prerequisites: *CA 3011 Communication Arts Research*
AD 4101 Advertising Workshop I
Co-requisite: *AD 4115 Campaign Planning and Management*

A continuing training at a higher level in producing advertisements based on the advertising strategy.

AD 4103 **Creative Media Management** **3 Credits**
Prerequisite: *AD 3102 Advertising Media Planning*

Integration of various types of media, including traditional media and new media for advertising campaign, principles and practices of media management in digital era, especially the difficulties and challenges from different circumstances.

AD 4104 **Advertising and Marketing Communication Management** **3 Credits**
Co-requisite: *AD 4101 Advertising Workshop I*

Management of personal and non-personal communication in marketing process, functions of advertising agency and advertising and marketing communication departments of large business firms, accounts management, advertising presentation and operation of advertising and marketing communication effectiveness.

AD 4107 **Basic Copywriting (Thai)** **3 Credits**
Prerequisite: *AD3101 Principles of Marketing Communication*

Copywriting in Thai through analysis of effectiveness of advertisements in the media, significant characteristics of advertisements appropriately applied, and practice in the art of copywriting in Thai.

AD 4108 **Basic Copywriting (English)** **3 Credits**
Prerequisite: *AD3101 Principles of Marketing Communication*
or *MKT 2280 Principles of Marketing (For Marketing students)*

Copywriting in English through analysis of effectiveness of advertisements in the media, significant characteristics of advertisements appropriately applied, and practice in the art of copywriting in English.

AD 4111 **Advanced Brand Communication** **3 Credits**
Prerequisite: *AD 3112 Brand Communication*

Analysis of branding issues and concepts arisen from problems with its improper usage in current situations, areas of branding strategies on the organization and product level, brand equity, and brand communication strategies.

AD 4115 **Campaign Planning and Management** **3 Credits**
Prerequisite: *AD 4104 Advertising and Marketing Communication Management*
Co-requisite: *AD 4102 Advertising Workshop II*

Planning and Management of advertising campaign planning, including integration of various communication tools, media strategy formulation, selections and measurement of campaign effectiveness.

AD 4122 **Direct Communication Campaign Management** **3 Credits**
Prerequisite: *AD 3101 Principles of Marketing Communication*

Non-traditional formal channels of advertising that is designed to present well-executed direct advertising campaign to targeted consumers, methods of direct communication that widens customer experience towards the product or service in order to develop customer value and to accomplish marketing success.

AD 4123 **Marketing Channel Communication** **3 Credits**
Prerequisites: *CA 2004 Introduction to Advertising*
MKT 2280 Principles of Marketing

Integration of various communication processes and interactions between manufacturers and middlemen, including channel planning, and channel communication management, principles and practices of marketing channel communication management in advertising campaign.

AE 1100 **Core Flying: Single-Engine Flight – Ground** **3 Credits**

Regulations, safety, pre-solo operations, cross-country planning, airspace, chart use, communications, weather, performance, weight and balance, aerodynamics, and decision-making.

AE 1200 **Core Flying: Single-Engine Flight - Flight** **2 Credits**
Prerequisite or Co-requisite: *AE 1100 Core-Flying: Single-Engine Flight – Ground*

Flying practice to be done according to AE 1100 Core Flying: Single-Engine Flight - Ground

AE 1910 **Problem-based Training in Aircraft Maintenance I** **1 Credit**

Skill training on the aeronautic engineering and training at the actual work site.

AE 1911 **Problem-based Training in Aircraft Maintenance II** **1 Credit**

Skill training on the aeronautic engineering and training at the actual work site.

AE 1920 **Problem-based Training in Aircraft Maintenance III** **1 Credit**

Skill training on the aeronautic engineering and training on the actual work site.

AE 2100 **Basic Flying: Single/Multi-Engine - Ground** **3 Credits**
Prerequisite: *AE 1100 Core-Flying: Single-Engine Flight–Ground*

Instrument flying regulations, safety, operations, navigation systems, chart use, weather, flight planning, decision-making, and crew resource management.

AE 2200 **Basic Flying: Single/Multi-Engine-Flight I** **1 Credit**
Prerequisite: *AE 1200 Core Flying: Single-Engine-Flight*

Fight practice to be done according to AE 2100 Basic Flying: Single/Multi-Engine – Ground

AE 2201 **Basic Flying: Single/Multi-Engine-Flight II** **3 Credits**
Prerequisite: *AE 2200 Basic Flying: Single/Multi-Engine-Flight I*
Prerequisite or Co-requisite: *AE 2202 Basic Flying: Multi-Engine Operations*

Training in maneuvers and procedures required for instrument flight test in order to be endorsed with instrument rating in pilot license.

AE 2202 **Basic Flying: Multi-Engine Operations** **2 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Multi-engine rating, multi-engine aerodynamics, maneuvers and procedures, engine-out operations, safety, operations, flight planning, and decision-making.

AE 2203 **Basic Flying: Operational Procedures** **1 Credit**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Operational procedures related to the safe operations of flight, operational procedures prescribed in ICAO annex 6: Operation of Aircraft, national and international aviation law.

AE 2300 **Basic Flying: Flight Communications** **1 Credit**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Radio Telephony (RT) communications which lie at the base of procedural flying in the professsional aviation environment, standard phraseologies and terminologies used in international aviation environment.

AE 2401 **Basic Flying: Air Law** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

International air law, JAR-OPS1 and ICAO documents and annexes relevant to international conventions and agreements.

AE 2402 **English for Aviation** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight- Ground*
AE 2100 Basic Flying: Single/ Multi-Engine - Ground
AE 2300 Basic Flying: Flight Communications

English language used in aviation communications, practice of the reading skill to fully understand Route Manual and Flight Operations Manual, practice of ATC and radiotelephony exchange, the functionally created statements, questions and responses in English as required by the nature of the job and responsibility in both oral and written forms, including communication in English with ATC by using correct structures and pronunciation patterns in order to be understood by both native and non-native speakers of English.

AE 2501 **Maintenance English I** **1 Credit**

Basic reading and writing English which is used in maintenance, and technical terms for maintenance.

AE 2502 **Maintenance English II** **1 Credit**

Advanced English in maintenance related to components and systems of aircraft, reading of technical documents and formal aircraft documents.

AE 2700 **Fundamental Aircraft: Propulsion Theory** **2 Credits**

Introduction to basic fundamental theory of aerospace propulsion system, background in the design and operation of different types of propulsion systems for aerospace applications to design, development, operation and maintenance of propulsion systems.

AE 2701 **Fundamental Aircraft: Aircraft Engine** **3 Credits**

Basic fundamental theory of piston and gas turbine engine, thermodynamics, mathematical model of each part of piston and gas turbine engine, the working cycle of this heat engine, Basic Gas Turbine Design, Gas Turbine Assembly - Design, Metallurgy and Cooling ,Gas Turbine Main Auxiliaries, Gas Turbine Safety and Fire Protection ,Gas Turbine Operation, Gas Turbine Maintenance.

AE 2702 **Fundamental Aircraft: Aerodynamics** **2 Credits**

Basic knowledge of aviation, namely fluid dynamics, introduction to flight, flight dynamics, types of aircraft and behaviors of aircraft onboard.

AE 2703 **Fundamental Aircraft: Aircraft Structure** **3 Credits**

Basic aircraft structure both theory of basic structure and strength of material, including fatigues and components of airframe and joints.

AE 2704 **Fundamental Aircraft: Aircraft Material** **3 Credits**

Basic theory and basic knowledge of aircraft material, types of material especially composite material including the analysis of the problem and fixing.

AE 2705 **Fundamental Aircraft: Aircraft Performance** **3 Credits**

Fundamentals of propellers and jet aircraft performance, equation of motion, level flight, gliding, climbing including range and endurance based on FAA requirement.

AE 2901 **Fundamental Aircraft: Practical Verification** **1 Credit**

Practice of the theoretical knowledge in "Fundamental Aircraft". The practical assignment related to the topic is given.

AE 3200 **Intermediate Flying: Flight Simulator Training Device I** **1 Credit**
Prerequisite: *AE 1200 Core Flying: Single-Engine Flight - Flight*

Training in cockpit resources management, development of Threat and Error Management (TEM) skills, Standard Operating Procedures (SOPs), application of knowledge to the flight training by showing competency in flying techniques, basic concept of flying method and also basic automatic flight by using correct basic of flying and flying techniques in flight simulator.

AE 3201 **Intermediate Flying: Flight Simulator Training Device II** **1 Credit**
Prerequisite: *AE 3200 Intermediate Flying: Flight Simulator*

Training Device I Training in cockpit resources management, development of Threat and Error Management (TEM) skills, the Standard Operating Procedures (SOPs), application of knowledge to the flight training by showing competency in flying techniques, basic concept of flying method both in normal and non-normal flight procedures and also basic automatic flight by using correct basic of flying and flying techniques in flight simulator.

AE 3300 **Intermediate Flying: Route Manual and Pilot Applications** **3 Credits**
Prerequisite: *AE 2203 Basic Flying: Operational Procedures*
AE 3301 Intermediate Flying: General Navigation
AE 3502 Intermediate Flying: Radio Navigation

Application of the rules and regulations stated in Route Manual for all phases of flight from pre-flight planning until landing of the aircraft which include pre-flight planning, en-route charts, approach and landing charts, meteorological rules and regulations, operations and information.

AE 3301 **Intermediate Flying: General Navigation** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

All aspects of classical air navigation from basic pilot navigation to advanced plotting, use of flight computers, maps and related charts for navigation.

AE 3302 **Intermediate Flying: Flight Performance and Planning I** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Knowledge and principles to enable the pilot and future captain to check that an aircraft is correctly loaded and balanced for safe and efficient operations which include theories required to operate an aircraft safely in all phases of flight: take-off, climb, cruise, descent and landing, as well as typical aircraft types.

AE 3303 **Intermediate Flying: Flight Performance and Planning II** **3 Credits**
Prerequisite: *AE 3302 Intermediate Flying: Flight Performance and Flight Planning I*
AE 3500 Intermediate Flying: Airframes and Aircraft Systems

Practical flight planning instruction based upon aircraft such as the Boeing and Airbus, as well as aspects of flight planning such as the weather factor.

AE 3304 **Intermediate Flying: Meteorology** **3 Credits**

All aspects of meteorology and its application to flight operations, meteorology and weather forecasting which contribute greatly to flight safety, how weather-related, in-flight hazards arise and how they should be predicted, avoided and or dealt with.

AE 3310 **Aircraft Maintenance: Maintenance Human Factor** **1 Credit**

Factors that might cause damage in maintenance, theory of human behavior and proactive model including how to avoid accidents during maintaining aircraft and maintenance safety.

AE 3311 **Aircraft System: Technical Document System** **3 Credits**

Common and manufacturing aircraft manual, service letters, service bulletin and other issued documents, which are presented in terms of ATA system for working in maintenance.

AE 3312 **Aircraft System: Logistics** **2 Credits**

Logistics or maintenance and material support, how to supply the material or spare parts during conducting maintenance in order to avoid lack or not-in-time materials, systematic management based on basic logistics.

AE 3400 **Intermediate Flying: Advanced Aerodynamics** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Basic aerodynamic theory to transonic and supersonic flight to help professional pilots master the fundamental principles upon which flight depends and which are essential to a full understanding of the flight characteristics of whichever aircraft they may operate.

AE 3401 **Avionics** **3 Credits**

Basic theory of avionics including the indicators and instrument used on aircraft, usefulness of this system and problems that might occur.

AE 3411 **Aircraft System: Aviation Acts and Airworthiness Regulations** **3 Credits**

Aviation Acts, Airworthiness Regulation. Laws which relate to maintenance and flight operation based on FAA and EASA.

AE 3500 **Intermediate Flying: Airframes and Aircraft Systems** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Eight systems which comprise of the essential components of the modern aircraft, every part of the aircraft in details from the basic structure, hydraulic, fuel, air conditioning, anti-icing and flight-control systems to the emergency equipment and landing gear.

AE 3501 **Intermediate Flying: Power Plants and Instrumentations** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Engine design and engine operation considerations as well as recognition of engine malfunctions, flight instruments, warning and recording equipment and automatic flight control systems.

AE 3502 **Intermediate Flying: Radio Navigation** **3 Credits**
Prerequisite: *AE 1100 Core Flying: Single-Engine Flight – Ground*

Radio navigation facilities available for the navigation of aircraft during departure, en-route and approach, as well as the radar facilities used for the control of aircraft and for in-flight safety, and the latest Global Navigation Satellite Systems (GNSS).

AE 3511 **Aircraft System: Aircraft Communications** **1 Credit**

Introduction to basic fundamental theory of communication technology, communication equipment and systems using in aviation, signal flow chart and how to understand the communication system.

AE 3512 **Aircraft System: Ground Support Equipment** **2 Credits**

Types of Ground Support Equipment (GSE) which are used to support during conducting maintenance, including how to handle and provide maintenance to GSE, units such as airline or maintenance company to be responsible for GSE.

AE 3513 **Aircraft System: Non-Destructive Inspection** **3 Credits**

Basic theory, current methods of Non-Destructive Inspection (NDI) used for aircraft structures, level of NDI, technique and tools.

AE 3600 **Advanced Flying: Multi-Engine Turbine – Ground** **3 Credits**
Prerequisite: *AE 3201 Intermediate Flying: Flight Simulator Training Device II*
AE 3300 Intermediate Flying: Route Manual and Pilot Applications
AE 3303 Intermediate Flying: Flight Performance and Flight Planning
AE 3501 Intermediate Flying: Power Plants and Instrumentations

Multi-engine turbine powered aircraft systems, high speed aerodynamics, aircraft stability and control, basic knowledge for flight operation, basic airline business and ground operation, aircraft performance and limitations, weight and balance, avionics and automatic functions which include safety and emergency.

AE 3601 **Advanced Flying: Multi-Engine Turbine Flight** **4 Credits**
Prerequisite or Co-requisite: *AE 3600 Advanced Flying: Multi-Engine Turbine – Ground*

Training in cockpit resources management, development of Threat and Error Management (TEM) skills thorough understanding of the Standard Operating Procedures (SOPs), application of knowledge to the flight training by showing competency in flying techniques, basic concept of flying method both in normal and non-normal flight procedures and also basic automatic flight.

AE 3602 **Advanced Flying: Specific Aircraft Flight-Ground** **3 Credits**
Prerequisite: *AE 3601 Advanced Flying: Multi-Engine Turbine Powered Flight*
AE 4300 Intermediate Flying: Crew Resource Management and Flight Safety

Aircraft system for A330-300 commercial aircraft which include the airframe and power plant, avionics, aircraft performance and limitations, weight and balance and safety and emergency.

AE 3603 **Advanced Flying: Specific Aircraft Flight-Flight** **3 Credits**
Co-requisite: *AE 3602 Advance Flying: Specific Aircraft Flight-Ground*

Eight training modules which are Maintenance Flight Training Device (MFTD) normal, Full Flight Simulator (FFS) normal, Maintenance Flight Training Device (MFTD) abnormal and emergency, additional specific training, Base Training in Full Flight Simulator (FFS), Full Flight Simulator (FFS) conformity check or Skill Test and Base Training and CAA Check (Based on A330-300 aircraft).

AE 3700 **Commercial Flight I** **1 Credit**
Prerequisite: *AE 2201 Basic Flying: Single/ Multi-Engine- Flight II*

Training in the maneuvers and procedures necessary to meet the standards contained in the commercial pilot practical test standards, and training in cockpit resources management and safe flying practices.

AE 3701 **Commercial Flight II** **1 Credit**
Prerequisite: *AE 3700 Commercial Flight I*

Continued training in the maneuvers and procedures necessary to meet the standards contained in the commercial pilot practical test standards, and training in cockpit resources management and safe flying practices.

AE 3702 **Commercial Flight III** **1 Credit**
Prerequisite: *AE 3701 Commercial Flight II*

Continued training in the maneuvers and procedures necessary to meet the standards contained in the commercial pilot practical test standards, and training in cockpit resources management and safe flying practices.

AE 3703 **Commercial Flight IV** **1 Credit**
Prerequisite: *AE 3702 Commercial Flight III*

Continued training in the maneuvers and procedures necessary to meet the standards contained in the commercial pilot practical test standards, and training in cockpit resources management and safe flying practices.

AE 3710 **Aircraft Maintenance: Aircraft Maintenance I** **3 Credits**

Basic aircraft maintenance which concerns the importance, the meaning, the program of maintenance and the organization, and general regulations related to maintenance.

AE 3711 **Aircraft Maintenance: Aircraft Maintenance II** **3 Credits**

Relationship between the operation of flight and maintenance in airline or maintenance repair station, each part of section in maintenance organization, discussion of problems in maintenance management to understand the up-to-date situation in both local and global region.

AE 3712 **Aircraft System: Hydraulic and Pneumatic System** **3 Credits**

Basic fundamental theory of hydraulic and pneumatic power system and their applications in various aircraft systems, Pascal's law in an opened and closed chamber and its application, different components consisting in a simple hydraulic system, functional principle of each component in hydraulic system. Students will learn to design a simple hydraulic system, read a flow chart diagram and perform maintenance on the system involving hydraulic system.

AE 3713 **Aircraft System: Landing Gear and Brake System** **3 Credits**

Basic functional principle of landing gear and brake system, how to service and maintain landing gear systems and related components including wheels, brakes, indication systems and warning systems.

AE 3714 **Aircraft System: Fuel System** **3 Credits**

Basic fundamental theory and functional principle of fuel system, how to safely service aircraft with correct rated fuel and theory towards the maintenance of aircraft airframe fuel systems, advises on aircraft fuel systems removal, repair, and installation maintenance procedures and policies, diagnoses fuel system and component malfunctions, recommendations of corrective actions and resolutions of problems using technical publications and analytic techniques.

AE 3715 **Aircraft System: Power plant** **3 Credits**

Basic fundamental theory and functional principle of an aircraft power plant system, all the equipment which work together with the propulsion system, flow chart of power system which supports the aircraft power, functional principle of each part and how to perform maintenance on power plant system.

AE 3716 **Aircraft System: Stability and Weight & Balance System** **3 Credits**

Stability of aircraft based on basic physics and flight dynamics, basic of Weight and Balance (W&B), including tools, schedule and method, discussion of importance and problems.

AE 3800 **Aircraft System: Aircraft Electrical System** **3 Credits**

Basic fundamental theory of aircraft electrical system technology, equipment and sources of electrical supply using in aviation, electrical flow chart and how to understand the communication.

AE 3900 **Seminar in International and Domestic Navigation** **3 Credits**
Prerequisite: *AE 2100 Basic Flying: Single/Multi-Engine-Ground*

Domestic and flight regulations and evaluation of their impacts on long-range domestic and international flights, use of ICAO operational requirements and typical air carrier Ops SPECS to plan domestic and transoceanic flights, high-altitude airspace, navigation, and approach procedure chart interpretation, concepts of MNPS and RVSM airspace, dispatch procedures, ETOPS, ETP, drift down, track messages, LRN accuracy checks, Oceanic Air Traffic Control clearances, international METARs and TAFs and emergencies and contingencies while on oceanic tracks, communication systems requirements and methodology which include satellite, digital, and analog devices.

AE 3901 **Aircraft Maintenance: Practical Verification** **1 Credit**

Practice of the theoretical knowledge in "Aircraft Maintenance Aircraft". The practical assignment related to the topic is given.

AE 4300 **Intermediate Flying: Crew Resources Management And Flight Safety** **1 Credit**

Prerequisite: *AE 1100 Core Flying: Single-Engine Flight– Ground*

Human error and reliability, error chain, error prevention and detection, organizational factors, company safety culture, stress and stress management, fatigue and vigilance, information acquisition and processing, situational awareness, workload management, aeronautical decision making, communication and coordination inside and outside the cockpit, leadership and team behavior synergy, automation and philosophy of the usage of automation, basic flight safety concepts, theories of cause of accident, Human Factors Failure Analysis Classification System (H-FACS), and case study of both incident and accident.

AE 4301 **Intermediate Flying: Human Performance and Limitations** **3 Credits**

Limitations of the human body operating in an aviation environment as well as dealing with all the aspects of the decision making process relevant to the pilot.

AE 4700 **Commercial Pilot License Instructor** **6 Credits**

Prerequisite: *Obtain commercial pilot license preferably with instrument and multi-engine rating*

Fundamental instructions required to be the flight instructor for airplane which include learning process, human behavior, effective communication, teaching methods, critique and evaluation, and professional development.

AE 4701 **Commercial Pilot License Instructor : Flight I** **2 Credits**

Prerequisite: *Obtain Commercial Pilot License Single-Engine and instrument rating*
AE 4700 Commercial Pilot License Instructor

Training in the maneuvers and procedures necessary to meet the standards contained in the flight instructor practical test standards, Single-Engine Land with Instrument Airplane Rating, training in cockpit resources management and safe flying practices, associated ground instructions which include completion of the fundamentals of instruction, the flight instructor airplane, and the flight instructor instrument written test.

AE 4702 **Commercial Pilot License Instructor: Flight II** **2 Credits**

Pre-requisite: *Obtain Commercial Pilot License multi-engine and instrument rating*
AE 4700 Commercial Pilot License Instructor

Training in the maneuvers and procedures necessary to meet the standards required to add the Multi-Engine Flight Instructor Rating, additional instruction in advanced multi-engine flight crew training techniques including cockpit resources management and safe flying practices.

AE 4901 **Aircraft System: Practical Verification** **1 Credit**

Practice of the theoretical knowledge in "Aircraft System Aircraft". The practical assignment related to the topic is given.

AE 4904 **Special Problems in Aeronautic Engineering I** **3 Credits**

Selected problems in aeronautic engineering. Students will be supervised to do research on certain problems in aeronautic engineering.

AE 4905 **Special Problems in Aeronautic Engineering II** **2 Credits**

Pre-requisite: *AE 4904 Special Problems in Aeronautic Engineering I*

Selected problems in aeronautic engineering. Students will be supervised to do research on certain problems in aeronautic engineering.

AE 4906 **Special Problems in Aeronautic Engineering III** **1 Credit**

Pre-requisite: *AE 4905 Special Problems in Aeronautic Engineering II*

Selected problems in aeronautic engineering. Students will be supervised to do research on certain problems in aeronautic engineering.

AE 4930 **Advanced Topics in Aeronautic Engineering I** **3 Credits**

Most current advancements in a particular field of study as determined by the instructor of the course. The topic of each semester depends on the varied interests of the students or the research requirements.

AE 4931 **Advanced Topics in Aeronautic Engineering II** **2 Credits**
Pre-requisite: *AE 4930 Advanced Topics in Aeronautic Engineering I*

Most current advancements in a particular field of study as determined by the instructor of the course. The topic of each semester depends on the varied interests of the students or the research requirements.

AE 4932 **Advanced Topics in Aeronautic Engineering III** **1 Credit**
Pre-requisite: *AE 4931 Advanced Topics in Aeronautic Engineering II*

Most current advancements in a particular field of study as determined by the instructor of the course. The topic of each semester depends on the varied interests of the students or the research requirements.

AI 3201 **Biological Material and Biodegradation** **3 Credits**
Prerequisites: *BS 1005 Principles of Biology and*
BS 1006 Biology Laboratory

Properties and mechanisms of biodeterioration in natural materials important in Agro-industry, techniques used in assessing the extent and causes of deterioration, damage reduction strategy and technique, including biodeterioration in the environment, and corresponding laboratory sessions.

AI 3202 **Introduction to Agro-Industry** **2 Credits**
Prerequisites: *BS 1001 General Chemistry and*
BS 1005 Principles of Biology

Meaning and importance of agro-industry to the economy of the country, factors and composition of agro-industry, types of agro-industrial products and the value adding processes.

AI 3203 **Instrumentation and Control in Agro-Industrial Process** **3 Credits**
Prerequisites: *BS 1001 General Chemistry,*
BS 1201 Physics for Bioscience and
BS 1202 Physics Laboratory for Bioscience

Principles and application of instruments involved in biotechnology and their variation in control system, their roles in production efficiency and stability and their application in research, the application of mathematics and physics models to convert the signal and the control system in Agro-Industry, and corresponding laboratory sessions.

AI 3204 **Processing of Agricultural Products I** **3 Credits**
Prerequisite: *AI 3202 Introduction to Agro-Industry*

Chemical, physical and biological properties and characteristics of agricultural raw materials, factors and processing principles for converting agricultural raw materials into industrial products. This course is also combined with laboratory sessions.

AI 3205 **Bioychemical Engineering** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry and*
BS 2011 Introduction to Microbiology

Applications of biological organisms and their enzymes in the bioprocesses and the enzyme technology, bioprocess economics, applied enzyme kinetics, fermentation kinetics, metabolic stoichiometry, transport phenomena, sterilization techniques, bioreactor design a nd operation, upstream and downstream processes and optimization in the process scale up.

AI 3206 **Agro-Industry Management and Marketing** **3 Credits**
Prerequisite: *BG 2403 Introduction to Economics*

Basic principles of marketing and management which can be applied to use with agricultural products. The topics include environmental factors in Agro- industry, consumer's buying behavior, marketing research, product development, pricing strategy, distribution channel, and promotion strategy in with the examples and the case studies of agro-industrial products.

AI 3207 **Unit Operation of Agro-Industry I** **3 Credits**
Prerequisite: *BT 3013 Introduction to Bioprocess Engineering*

Concepts and principles of engineering for various unit operations in agro-industry, topics include pumps, heat exchangers, evaporators, dryers, refrigerators, boilers, retorts, and size reduction equipment, and corresponding laboratory sessions.

AI 3208 **Standards and Regulations of Agricultural Products** **2 Credits**
Prerequisite: *AI 3202 Introduction to Agro-Industry*
or *FT 3101 Introduction to Food Technology*

Legal and scientific issues involved in the national and international regulations of agricultural products and foods, philosophy underpinning the application of regulation statutes, roles and responsibilities of Thai FDA and international organizations e.g. WTO and its agreements etc., Food Act B.E. 2522, food standards, Codex, risk analysis, and nutrition labeling and sources of information necessary for communication with government and public are also included.

AI 4208 **Processing of Agricultural Products II** **3 Credits**
Prerequisite: *AI 3204 Processing of Agricultural Products I*

Processing methods of agricultural products into food products and non-food products including fruit and vegetable, cereal, meat, milk, rubber, wood and textile and packaging of the products, and corresponding laboratory sessions.

AI 4209 **Unit Operation for Agro-Industry II** **3 Credits**
Prerequisite: *AI 3207 Unit Operation for Agro-Industry I*

Concepts and principles of engineering for various unit operations in separation processes which Topics include distillation columns, extractors, adsorption columns, absorption towers, membrane separators, crystallizers, filters, and centrifuges, and corresponding laboratory sessions.

AI 4211 **Fermentation Process** **3 Credits**
Prerequisite: *AI 3205 Biochemical Engineering*

Principles of isolation, modification and storage techniques of industrial microorganisms, nutrients needed for microbial growth and media optimization, optimization and control processes during upstream, fermentation and downstream processes in batch, continuous and fed batch bioreactors, and corresponding laboratory sessions.

AI 4212 **Tissue Culture Techniques and Application** **3 Credits**
Prerequisites: *BS 1005 Principles of Biology*
and *BS 1006 Biology Laboratory*

Techniques and physiological basis of plant tissue culture used in research and industry, commercial laboratories culture media, organogenesis, somatic embryogenesis and micropropagation, and corresponding laboratory sessions.

AI 4213 **Agro-Industrial Quality Control** **3 Credits**
Prerequisite: *BG 1201 Statistics I*

Agro-industrial production as a systematic and controllable process, acceptance sampling plans for analysis and control of quality, quality management, quality control, quality assurance and quality improvement, quality assurance systems,Total Quality Management and ISO series within food factory, and corresponding laboratory sessions.

AI 4215 **Agro-Industry Preservation and Packaging** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Product II*

Reasons and factors relating to raw material and product spoilage, storage and preservation methods, principles of packaging that include packaging materials used in transportation and distribution, their properties, forms and applications, and corresponding laboratory sessions.

AI 4216 **Fiber Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Principles in production of natural fiber, sources of raw material, processing methods used in Fiber Technology, research and development of natural fiber and application as agro-industrial, and corresponding laboratory sessions.

AI 4217 **Essential Oil Technology** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry*

Composition, physical and chemical characteristics of essential oils, sources of raw material, extraction, purification and use of essential oils, and corresponding laboratory sessions.

AI 4218 **Agro-Industrial Product Development** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Product II*

New products and product development system for Agro-industry in laboratory and industry, generation and screening of new product ideas, design of product concept, product design specifications, prototype development and process development, sensory testing and testing of consumer acceptability, shelf life evaluation, launching of new products and evaluation of launch and hand-on experience in laboratory.

AI 4219 **Sugar Technology** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry and*
AI 4208 Processing of Agricultural Product II
or *FT 4108 Industrial Food Processing II*

Chemical and physical properties of sugar, sugar processing and by-products from sugar industry, quality control and development of new sugar products to be used in other industries, and corresponding laboratory sessions.

AI 4220 **Post Harvest Technology** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry and*
AI 4208 Processing of Agricultural Product II
or *FT 4108 Industrial Food Processing II*

Principles underlying physiological changes in fresh agricultural produces, harvesting methods and post harvest technology to handle the post harvested crops in order to maintain the crop qualities or to delay the changes involved in deterioration of the crop qualities and, corresponding laboratory sessions.

AI 4221 **Alcoholic Beverage Technology** **3 Credits**
Prerequisite: *BT 3015 Industrial Fermentation*

Current technologies used in production of alcoholic beverage, and monitoring of impact of fermentation variables on microbial performance and product quality, distillation principles and practices, production technology of brandy, whiskey, rum, vodka, gins, and other distilled beverages, characteristics of raw materials, fermentation, distillation, and aging, manufacturing processes used in alcoholic beverages production, research development involving the use of biotechnology for the purpose of yield, solving quality related problems and stimulation innovation, an introduction to management, marketing and economics of most of the alcoholic beverages, review market segmentation and explore alternative, social policy formation, and corresponding laboratory sessions.

AI 4222 **Water and Waste Management** **3 Credits**
Prerequisite: *BS 2011 Introduction to Microbiology*

Water and waste management starting from good preparation of raw material for industry, clean technology, waste controlling, and water management of downstream process to reduce sources of pollution, and corresponding laboratory sessions.

AI 4223 **Waste and By-product Utilization** **3 Credits**
Prerequisite: *BS 2011 Introduction to Microbiology*

Principles and practical issues for using of waste and by-products from industry to find optimum method to produce products from those waste materials, and corresponding laboratory sessions.

AI 4226 **Plant Breeding Technology** **3 Credits**
Prerequisites: *BS 2012 Genetics and*
AI 3202 Introduction to Agro-Industry

Life cycle of monocotyledons and dicotyledons, sexual and asexual reproduction of plant, factors affecting plant growth, plant cultivation techniques and seed storage technology, mechanisms of germination, seed selection, techniques for sexual and asexual propagation. The course also includes the study of plant genetic, inheritance, germplasm bank, the use of genetic engineering to create new plant species and also industrial seed production techniques, and corresponding laboratory sessions.

AI 4232 **Secondary Metabolites of Plant Cells** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry*
and *BS 2007 Basic Biochemistry Laboratory*

Use of plant cells for production of secondary metabolism products such as alkaloid, monoterpenes, biopolymer, antimicrobial agents and flavors products. The course will also discuss on metabolic regulation of the desired products, genetic manipulation of plant cells with different techniques e.g. recombinant DNA and protoplast fusion techniques, and corresponding laboratory sessions.

AI 4233 **Pulp and Paper Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Basic knowledge in pulp and paper science and technology, pulping process, pulp bleaching, paper processing, coating of paper, use of non-fibrous additives, measurement of pulp and paper quality, paper recycling process, water treatment in the pulp and paper mill, and new technology in pulp and paper processing.

AI 4234 **Wood Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Types of wood, natural properties of wood, mechanical properties and degradation, basic principles of wood preservation, processing of wood and commercial uses for wood products as well as safety and quality control in wood manufacturer.

AI 4235 **Rubber Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Chemical and physical properties of rubber, definition and basic concepts of Caoutechouc, rubber and elastomer, vulcanization, natural rubber latex and coagulation technology, manufacturing of industrial rubber latex sheets, block rubber and rubberized products and recent developments in the biotechnology associated with rubber technology.

AI 4236 **Feed Manufacturing Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Production of feeds, nutritional requirement of economically important animals, the composition and nutrition characteristics of common feeds, feed formulation, economics of feeding programs for farm animals, plant layout design, selection of appropriate equipment, quality control, feed manufacturing management, safety and sanitation for feed manufacturing industry and also the application of biotechnology to improve quality of feeds.

AI 4237 **Leather Product Technology** **3 Credits**
Prerequisite: *AI 4208 Processing of Agricultural Products II*

Leather and hide used for industrial purposes and their properties as well as processing technology of leather and hide, equipment and tools used in leather industry, waste and environmental management for leather manufacturer.

AI 4238 **Mushroom Cultivation Technology** **3 Credits**
Prerequisite: *BT 3015 Industrial Fermentation*

Biology and cultivation of different types of mushroom that is economically important especially for human consumption, preparation of starter culture, support materials and media preparation and sterilization, environmental control for fruiting body formation, preparation of cultivation room or space, cultivation methods and also post harvest technology for mushroom, including mushroom diseases and prevention methods.

AI 4239 **Selected Topic** **3 Credits**

Discussion and advanced study of a selected topic in the field of Agro-Industry, and corresponding laboratory sessions.

AI 4290 **Special Project** **3 Credits**

A project involving an aspect of Agro-Industry, design of the study, collection and analysis of experimental data under the faculty member's supervision. A written report and presentation of the research work in a seminar is compulsory.

AI 4291 **Field Trip** **1 Credit**

Visit to food or Agro-Industrial production facilities to view specific aspects of food processing and management, written report of the tour is required.

AI 4292 **Seminar** **1 Credit**

Method in preparation and performing a scientific presentation, demonstration of scientific research paper presentation from veteran speakers in the field of biotechnology, food technology and agro-industry. Each student is required to present a selected paper of interest from scientific journals.

AI 4294 **Internship** **Non-credit**

Practical training in Agro-Industry or biotechnology related industry, government sector and/or academic institute of no less than 300 hours to develop skills and confidence after graduation.

AR 1102 **Visual Studies and Communication** **3 Credits**

Composition of abstract visual art using elements, such as shape, form, space, figure and ground, color, and texture. Design experimentation through various methods of communication, such as drawing painting, collage, folding, carving and model making. Emphasis given to the aesthetics of composition, idea manifestation, and communication skills.

AR 1104 **Fundamentals of Architectural Design** **3 Credits**

Theory and architectural components and the basic design relationship between form, function in order to fulfill the perfection of architectural design.

AR 1106 **Architectural Drawing** **3 Credits**

Methods of drawing used in architecture and design profession i.e. orthographic projection, perspective projection, shade and shadow and drawing technique in pencil, and ink.

AR 1107 **Introduction to Creative Culture** **3 Credits**

Introduction to contemporary trends in design and art in the context of creative culture, visual, emotional and intellectual awareness of humankind's creativity, investigation of the developing, role, and influences of designers and artists on our society, promoting students' understanding and appreciation of art and design.

AR 2106 **History of Architecture I** **3 Credits**

Architectural history from the Prehistoric era to the Enlightenment periods, spanning both Western and Eastern civilizations. Comparative reviews incorporating research and analysis of the tendencies and forms of architecture, its concept, philosophy, and also construction methods as well as contextual influences posing on the consequent architecture, i.e., geographical, sociocultural, political, and technological factors by presenting a larger historical perspective by a chronological process and, expectantly, furthering the understanding of world events and their relationships to the development of architecture.

AR 2109 **Building Technology and Construction I** **3 Credits**

Introduction to small building construction, standard timber construction methods, short span beams, column and floor joist, properties of basic construction materials such as timber, concrete, masonry and studio work.

AR 2110 **Building Technology and Construction II** **3 Credits**
Prerequisite: *AR 2109 Building Technology and Construction I*

Medium building construction using reinforced concrete construction methods, light frame steel for the roof and principles of structural system, properties of building materials such as steel, glass and other standard building products and studio work.

AR 2202 **Architectural Design I** **6 Credits**
Prerequisite: *AR 1104 Fundamental of Architectural Design*

Introduction to architectural design of intimate-scale by considering basic related factors such as space, measure, structure, site, tectonics, program, and habitation, poetic meaning, human needs and the interaction of persons with the natural and built environment.

AR 2204 **Architectural Design II** **6 Credits**
Prerequisite: *AR 2202 Architectural Design I*

Continuation of practice from Architectural Design I, broader architectural dimensions, multi-user private and small-scale public design problems, how architecture fits contextually into existing circumstances, and how poetic meanings relate to built forms, analysis of existing places and synthesis incorporating the more complex multi-dimensions of architectural environments.

AR 2303 **Structural Analysis** **3 Credits**

Analysis of structural members under apply loads of the building: consist of joist, beam, floor, floor beam, column, footing, timber, steel and concrete structure and also properties of materials

AR 2304 **Structural Design** **3 Credits**
Prerequisite: *AR 2303 Structural Analysis*

Principles and concept of structural design in architecture, properties of materials, design criteria of materials selection and type of structure for structural form and member, survey of current and future structural technology.

AR 2305 **History of Architecture II** **3 Credits**
Prerequisite: *AR 2106 History of Architecture I*

Architectural history from the Industrial Revolution to the 1960's Late Modernism, comparative reviews incorporating research and analysis of the tendencies and forms of architecture, its concept, philosophy, and also construction methods, contextual influences posing on the consequent architecture, i.e., geographical, sociocultural, political, and technological factors.

AR 3101 **Introduction to Computer - Aided Design** **3 Credits**

Basic understanding of using computer as Architectural communication tool, AUTOCAD program for creating Architectural drawing and representation, introduction to basic three dimensional modeling/rendering and animation.

AR 3106 **Building Environmental Control I** **3 Credits**

Basic knowledge in building system and environmental control, water supply system, drainage system, water treatment system, sewage disposal, electrical system, fire protection system, communication system, security control system, and basic passive design application of shading device.

AR 3107 **Building Environmental Control II** **3 Credits**
Prerequisite: *AR 3106 Building Environmental Control I*

Advanced knowledge and practice of the building technology in relation to the building systems, natural resources and energy consumption and management, sustainable design concept and application.

AR 3200 **Theory and Concept in Architecture** **3 Credits**

Contemporary architectural theories and concepts, from the late Modern period to the present time, through the study of significant texts and buildings of the sentimental architects and theorists, investigating the formal, technological, social, political, and economical debates at issue within the discipline, with emphasis given to evaluate and articulate the interactions between theory and practice, thereby enabling students to formulate and assess strategies for the making of architecture.

AR 3203 **Architectural Design III** **6 Credits**
Prerequisite: *AR 2204 Architectural Design II*

Continuation of practice from Architectural Design II with moderate complex level, developing the design process skills through conceptualization, analysis, synthesis, visualization of architectural design at all levels of correlation of context, conceptualization in value, identity and aesthetic quality in architectural design and exploration of a medium scale public building.

AR 3207 **Architectural Design IV** **6 Credits**
Prerequisite: *AR 3203 Architectural Design III*

Continuation of practice from Architectural Design III with more complexity, experiment and application of a wide span structure, development of space and building form through the expression of structure, building envelope, materials, site planning, and space arrangement of building for tropical climate concerning aesthetics and utility system of building, and exploration of a medium scale public building.

AR 3307 **Building Technology and Construction III** **3 Credits**
Prerequisite: *AR 2110 Building Technology and Construction II*

Composite building materials and construction methods, large span pre-stressed and post-tensioned systems for floor and beam, fundamental principles of prefabricated – construction system and curtain wall and studio work.

AR 3308 **Building Technology and Construction IV** **3 Credits**
Prerequisite: *AR 3307 Building Technology and Construction III*

Introduction to design and construction principles of long span structure, high-rise building and their behavior and studio work.

AR 3309 **Architectural Design Methods** **3 Credits**

Parallel investigation in conjunction with the design studio in order to substantiate architectural knowledge through the discussion of actual architectural case studies, correlation between conceptual foundation, learned in the studio context, physical, and formal building and implementation in design practice, multi-dimensional organization of an architectural project, such as planning, formation, and execution. The transitional knowledge shall project a comprehensible realism, upon which students shall base their creativity for further application and learning.

AR 3310 **Fundamentals of Site and Landscape Planning** **3 Credits**

Shaping of the surroundings through a thorough analysis of issues starting from land, soil, and vegetation to social and economic factors to best determine a possible site layout.

AR 4101 **History of Thai Architecture** **3 Credits**

Components of Thai Architecture from Sukhothai to Rattanakosin periods, various influence and development of Thai Architecture, influences of culture from outside and analysis of unique Thai Architecture in different periods of time.

AR 4106 **Methods of Research and Data Processing** **3 Credits**

Principles and regulations of appropriate architectural research in conjunction with quality and quantity to support research, history and conservation, research in technology, marketing, social work and behavior involving architecture and case study analysis.

AR 4203 **Architectural Design V** **6 Credits**
Prerequisite: *AR 3207 Architectural Design IV*

Continuation of practice from Architectural design IV, complexities of building programs and spaces that must be integrated through correspondence of design process and building systems, relationships of contextual, spatial and programmatic factors as determinants in cluster buildings planning, and exploration of a medium to large scale public building.

AR 4205 **Architectural Design VI** **6 Credits**
Prerequisite: *AR 4203 Architectural Design V*

Continuation of practice from Architectural design V, importance of built environments responsive to urban context and communities, investigation and analysis the programmatic organization, multi-level of correlation of buildings in an urban fabric, parallel with current urban situation, forming the conceptual background of large scale public architecture relative to macro planning issues.

AR 4301 **Fundamentals of Urban and Regional Planning** **3 Credits**

Influence of developing city in physical, economics, structures, social work and its environment, relationship between city and its surroundings, process of city and regional design, conceptual design of urban, transportation, and environmental conservation.

AR 4302 **Seminar in Architecture** **3 Credits**

Architectural seminar involving architectural development from the past to present in terms of theoretical and practice and the task of professional development, problems and obstacles in working and their solutions.

AR 4303 **Practicum in Architecture (240 Hours)** **Non-credit**

A 240 working hour professional training at an architecture firm in order to expose students to all kinds of hands-on experiences and knowledge in the real architectural business world.

AR 5200 **Pre-Thesis in Architecture** **3 Credits**
Prerequisite: *AR 5203 Architectural Design VII*

Preparation of thesis information, context, theory and facilities of thesis research. The direction will be individually supervised by assigned advisor.

AR 5203 **Architectural Design VII** **6 Credits**
Prerequisite: *AR 4205 Architectural Design VI*

Continuation of practice from Architectural Design VI, developing design process focusing on multidisciplinary researches pertaining to individual interests, analysis and studying of issues of interest.

AR 5205 **Thesis in Architecture** **9 Credits**
Prerequisite: *AR 5200 Pre-Thesis in Architecture*

Students work on individual design project of an approved thesis project which investigates either from a theoretical or pragmatic position a subject of sufficient complexity.

AR 5300 **Professional Ethics and Practices** **3 Credits**

Ethical conduct of the professionals in the field, relationship between client and designer, designer and staff, an understanding of zoning, building laws, bidding and contracts, and work supervision.

AR 5401 **Building Cost Estimation and Control** **3 Credits**

Principles of building estimate and control by way of rough and exact estimation, the cost of materials, equipment and cost of labor, quality survey: materials, labor cost and equipment for final decision.

AR 5402 **Fundamentals of Architectural and Urban Conservation** **3 Credits**

Principles of architectural and urban conservation for evaluation and development, physical environment, economic and social work by government policy to reinforce fundamentals of architectural and urban conservation.

AR 5403 **Advanced Computer - Aided Design** **3 Credits**

Advanced study of computer-aided design and primary introduction to the creation of work with a design and technology context, narrative, computation, and interactivity. Students will develop their investigations and interests as well as a space for exploration, experimentation, and methodologies.

AR 5404 **Construction Management** **3 Credits**

Construction methods in relation to the engineer, contractor, architect, and security control for safety purposes, including municipal laws of construction.

AR 5405 **Individual Study in Architecture** **3 Credits**

Individual study on interesting architectural topics of interest of the students, under the supervision of the lecturers.

AR 5407 **Real Estate Development** **3 Credits**

Real estate development, procedure of financial investment and property management in city and rural areas.

AR 5409 **Architectural Psychology** **3 Credits**

Basic concepts of psychology development, fundamentals of psychology, human behavior, mankind and environment.

AR 5410 **Thai Architecture** **3 Credits**

Different components of Thai architecture as in building bodies, roofs and structures, analysis of different forms and spaces of Thai buildings from past to present time, conducting research on Thai design, architectural characteristics, site planning and appropriate functions.

AR 5413 **Project Management** **3 Credits**

Feasible programmed instruction of projects, site, economical techniques, professional management, budget analysis and leasing.

AR 5414 **Energy Saving** **3 Credits**

Unconventional energy saving resources, alternative and renewable energy such as solar energy, wind power, water power, geothermal power and biomass.

AR 5415 **Interactive Features Design** **3 Credits**

Introduction to the creation of work within a design and technological context, i.e., new media installation, interactive architecture, and intelligent space, developing individual investigations and interests by exploration, experimentation, and implementation.

AR 5416 **Façade Design in Architecture** **3 Credits**

Theoretical basis for a design understanding for overall performance of façades, examination of the complex interrelationships through a consideration of existing constructions, design criteria in successful design of façades, knowledge of materials, methods of manufacturing and installation.

AR 5417 **Interior Design by Architects** **3 Credits**

Introduction to interior spatial design and decoration necessary for professional architects incorporating lectures and studio, issues surrounding the interior profession and the architects, survey of contemporary works, principles of shaping and planning interior spatiality, design factors, programs, elements, colors, lighting, tectonic, presentation skills, and decorative materials for both new and renovation projects.

AR 5418 **Introduction to Exhibition Design** **3 Credits**

Introduction to exhibition design, strategies in designing for exhibitions and trade show booths, various issues ranging from programs space design, conceptual development of a thematic approach, and creation of a presentation system for products, artifacts, or artwork activities as business practices specific to the trade show and exhibit design industry, and the effective use of computer renderings and presentation skills.

AR 5419 **Special Topics in History, Theory and Technology in Architecture** **3 Credits**

Specialized topics of interest in history, theory and technology of architecture and urbanism.

AR 5420 **Light, Perception and Culture** **3 Credits**

Influences of lighting design to the human perceptual system and the culture of the times, understanding of how human beings react to and interact within light by exploring contemporary theories of perceptual, somatic, and aesthetic response to light, introduction to psychology of lighting design, and the impact of energy ethics on lighting decisions.

ART 0011 **Intensive Drawing** **Non-Credit**

Introduction to drawing tools and equipment, model observation, scale and proportion, shading, and shadowing, composition, extra studio class with individual study.

ART 1001 **Drawing** **3 Credits**
Prerequisite: *ART 0011 Intensive Drawing*

Principles of drawing, types of drawing tools and equipment, includes paper types, various medium implementation, shading, and shadowing, scale and proportion, composition preparatory process in the creation of intermediate and advanced art and design work, including a required field trip.

ART 1002 **2 Dimensional Foundation** **3 Credits**

Theory of design from nature and the relationship between man and his environment, significance of elements in nature to humans, including practical design projects in 2 and 3 dimensions.

ART 1003 **Color Theory** **3 Credits**

Introduction of color theory, tools and equipment, visual arts application, key terms and basics of color physics and psychology of visual perception, theories of color relationships, color sphere, color and value, primary color, secondary color, and tertiary colors identification. Portfolio of both assigned and individual painted projects.

ART 1004 **Technical Drawing** **3 Credits**

Introduction to mechanical drawing: equipment, lettering, sketching, orthographic projection, and basic dimensioning. Drawing may be done using the drafting board.

ART 1005 **Painting** **3 Credits**
Prerequisite: *ART 1001 Drawing*

Introduction to painting and its principles, theory of colors, tools and equipment, types of colors and its characteristics, techniques on medium implementation, individual expression under practical and a theoretical understanding, presentation and critique on assignments, including required field trip.

ART 1006 **3 Dimensional Foundation** **3 Credits**
Prerequisite: *ART 1002 2 Dimensional Foundation*

3D form, properties of light and shadow and their effects toward visual perception, and transformation of 2D to 3D works.

ART 1007 **Figure Drawing** **3 Credits**
Prerequisite: *ART 1001 Drawing*

Introduction to human anatomy, structures, types of figure drawing including gesture drawing, contour drawing, tonal modeling, shading and shadowing, including life drawing in studio with real observation on nude figures.

ART 1208 **Computer Graphic Foundation** **3 Credits**

Introduction to computer for design, software and hardware, vector and raster-based graphics and its nature, digital file development, principles of graphics design process, techniques and printing options.

ART 2009 **History of Art** **3 Credits**

A chronological survey of Western and Eastern arts, classifications and periods of historical significances and their impacts on human civilization from ancient to contemporary art.

ART 2010 **Typography** **3 Credits**

Foundation of typography as a tool for designers to make communication. Through observations, students will be trained on the Thai and Roman typography in order to acquire basic working skills for professional environment.

ART 2112 **Illustration** **3 Credits**

Drawing figures, nature and imagination in order to use in all print media, e.g. magazines, documentaries, novels, etc. The course Includes outdoor study.

ART 2311 **Photography** **2 Credits**

Basic camera control, types of lenses, photography technique, lighting condition and exposure. History of photography, skill practicing from class assignments.

ART 2313 **Digital Imaging** **3 Credits**

Image retouching technique by using Adobe Photoshop and other major image editing software, color management system and digital imaging workflow, studio shooting, location, and laboratory exercises.

ART 3014 **Thai Art** **3 Credits**

Nature of Thai art, traditions, folklore and influencing models for students to apply in the creation of visual communications. Students will study from museums and historical parks which include outdoor study.

ART 3016 **History of Modern Design** **3 Credits**

Survey of art and design since 1900s on historical contribution in the area of product design, furniture design, fashion design with the emphasis on graphic design, ideas of the past designers in the context of their own social and cultural climate and their impacts toward contemporary design practice.

ART 3017 **Internship (160 hours)** **1 Credit**
Prerequisite: *CGI 3212 Computer Graphics Design Studio V (for Computer Generated Imagery)*
VIS 3110 Visual Communication Design V (for Visual Communication Design)

Professional practice by working in a company which provides design business such as graphics design, computer graphics, photography and/ or advertising design. This course requires 160 hours working and satisfactory performance evaluated by a company supervisor.

ART 3215 **Interactive and Time Based Media** **3 Credits**
Prerequisite: *ART 1208 Computer Graphic Foundation*

Various types of graphics design media such as motion graphics design, web design and other trendy devices, The course will continue from the Computer Graphics Foundation and explore more in term of raster based digital graphics, movement of 2d graphics and other elements of design.

ART 4018 **Art Appreciation** **3 Credits**

Characteristics and importance of visual arts, literature, music, drama, film, taste, appreciation in the value of artistic creation, influence of art in human experiences with the artistic sense in visual communication design area including outdoor study.

ART 4019 **Aesthetics** **3 Credits**

Critical judgment based on sounded analytical skills from different perspectives in issues pertaining to art and design both globally and locally, scientific methods and quantitative measurement as keys to empower students' thought process.

ART 4020 **Laws and Ethics for Arts and Design** **3 Credits**

Law and ethics for art and design, libel law, printing law, management act and regulations concerning printing graphics, advertisement, radio, television, film and other laws defining the right duties, responsibilities and freedom of art and design in public.

BG 0008 **General Chemistry Laboratory** **1 Credit**
Prerequisite or Co requisite: *BG 1108 General Chemistry*

Experiments to be done according to BG 1108 General Chemistry

BG 1001 **English I** **3 Credits**

Lower intermediate academic English, with activities to foster reading, writing, listening and speaking skills in English through communicative activities in a meaningful academic context.

BG 1002 **English II** **3 Credits**
Prerequisite: *BG 1001 English I*

Intermediate academic English, reinforcing fluency and grammar with task-driven oral and writing exercises, developing vocabulary and sentence writing skills with combined reading comprehension exercises and writing practice.

BG 1108 **General Chemistry** **3 Credits**

Stoichiometry and basis of the atomic theory; properties of gas, liquid, solid and solution; chemical equilibrium; ionic equillibrium; chemical kinetic; electronic structures of atoms; chemical bonds; periodic properties; representative elements; nonmetal and transition metals.

BG 1200 **Mathematics for Business** **3 Credits**

Relation and various functions: linear, polynomial, exponential, logarithmic, rational and their applications in business and economics, linear programming, mathematics of finance and differential calculus: limits, derivatives, and optimization.

BG 1201 **Statistics I** **3 Credits**

Descriptive statistics, probability theory and inferential statistics, summarizing of data in tables and graphs, computation of descriptive statistics, rules of probability, probability distributions, confidence interval estimate of population parameters, and hypothesis testing.

BG 1204 **Calculus I** **3 Credits**

Function, limits, continuity, differentiation, integration, introduction of numerical computation, formula for interval approximation, differentiation and line integration, surface integration and volume integration, infinite series, Fourier series and integrals.

BG 1205 **Calculus II** **3 Credits**
Prerequisite: *BG 1204 Calculus I*

Space vectors, matrices and determinants, linear analytic geometry, differential calculus of multivariable functions, vector analysis, linear integrals, surface integral and volume integrals.

BG 1211 **Physics I** **3 Credits**

Mechanics of particles and rigid Body, properties of matters, fluid mechanics, heat, vibrations, waves.

BG 1212 **Physics Laboratory I** **1 Credit**
Prerequisite or Co-requisite: *BG 1211 Physics I*

Experiments to be done according to BG 1211 Physics I.

BG 1213 **Physics I** **3 Credits**
Prerequisite: *BG 1211 Physics I*

Fundamental electromagnetics, alternating current circuits, basic electronics, optics modern physics.

BG 1214 **Physics Laboratory II** **1 Credit**
Prerequisite or Co-requisite: *BG 1213 Physics II*

Experiments to be done according to BG 1213 Physics II.

BG 1221 **Computer Programming** **3 Credits**

Computer concepts, computer components, hardware and software interaction, EDP concepts, program design and development methodology, high-level language programming.

BG 1230 **Calculus** **3 Credits**

Functions, limits, continuity, technique and applications of differentiation, graphing functions, anti-derivatives, method of integration, differential equations, application of integrals, improper integrals and partial differentiation with applications.

BG 1301 **Fundamentals of Statistics** **3 Credits**

Descriptive statistics, probability theory and inferential statistics, summarizing of data in tables and graphs, computation of descriptive statistics, rules of probability, probability distributions, confidence interval estimate of population parameters, hypothesis testing and simple linear regression.

BG 1400 **Business Law I (Civil & Commercial)** **3 Credits**

Legal principles and practices of civil and commercial laws, fundamental principles of law, legal relationship between persons, nature of law, definition, types, interpretation, application, and cancellation of law and the judicial system, law on persons, types and capacity of persons, things, property, movable and immovable property, juristic acts, contract, obligation, torts, prescription, specific contracts e.g. purchase and sell contract, exchange, gift, hire of property, hire-purchase, hire of works, hire of services, carriage, loan, deposit, surtyship, mortgage, pledge, agency, brokerage, and insurance

BG 1401 **Business Law II (Partnership & Company)** **3 Credits**
Prerequisite: *BG 1400 Business Law I*

Law of juristic person namely partnership and limited company, relationship among partners, shareholders and third person, establishment, management, auditing, increasing and decreasing of registered capital, dissolution and liquidation, relationship with the commercial bank concerning the bill of exchange, promissory note, cheque, and other legal instruments.

BG 2000 **English III** **3 Credits**
Prerequisite: *BG 1002 English II*

Advanced English for academic and career purposes, emphasizing organization of ideas and clarity of expression and understanding.

BG 2001 **English IV** **3 Credits**
Prerequisite: *BG 2000 English III*

Advanced English for academic and career purposes, emphasizing critical and analytical skills, and formulating logical and coherent opinions.

BG 2200 **Statistics II** **3 Credits**
Prerequisite: *BG 1201 Statistics I*

Inferential statistics, correlation and regression analysis, ANOVA, index number, time series, non parametric tests, Chi-square, and their applications in business and economics.

BG 2207 **Engineering Mathematics** **3 Credits**
Prerequisite: *BG 1205 Calculus II*

First-order and higher-order ordinary differential equations, difference equations, functions of complex variable and their applications in engineering.

BG 2208 **Discrete Mathematics** **3 Credits**

Logic, set, proof, number theory, counting, probability, graph theory, machine and languages.

BG 2209 **Statistics for Engineers** **3 Credits**
Prerequisite: *BG 1204 Calculus I*

Sets and probability, random variables, probability distribution, continuous and discrete models, parameters approximation, reliability range, hypothesis tests, regression and linear correlation.

BG 2301 **Information Technology for Nurses** **2 Credits**

Information technology applicable to healthcare and nursing service, use of specific applications or programs in the clinical information system.

BG 2400 **Macroeconomics** **3 Credits**

Overall picture of economic system, relationship between microeconomics and macroeconomics theories, gross production, national income, output, saving and investment, economic growth, consumption behavior, role of the government and Central Bank in fiscal and monetary policies, balance of trade, balance of payment, importance and role of macroeconomics in a basic economic development, various economic problems and their solutions: inflation, deflation, unemployment and business cycles.

BG 2401 **Microeconomics** **3 Credits**

Microeconomics concepts and theories in making decision at firm level and consumer level (individual and market level), pricing mechanism, demand and supply, market equilibrium, consumption behavior, utility maximization, basic economic theory through the perfectly competitive model, input and output markets and the connection between them, market structures, theory of price determination, profit-maximization, and wage determination.

BG 2403 **Introduction to Economics** **3 Credits**

Basic economic principles and analysis of the economic environment in which consumption, production and exchange activities take place. The course will cover the analysis of economic decision made by consumers and producers including the price mechanism. Demand and supply analysis in product and factor markets, the Aggregate Demand and Aggregate Supply Analysis, GNP and NI measurement of the whole economy will be discussed.

BG 4000 **Advanced Engineering Mathematics** **3 Credits**
Prerequisite: *BG 2207 Engineering Mathematics*

Partial differential equations; fourier analysis; boundary value problems; introduction to linear algebra and their applications in engineering; linear mapping and dimensions; vector spaces and subspaces; complex analytic functions; conformal mapping; complex integrals; residue theory.

BIS 1141 **Business Software Applications** **0 Credit**

Training of how to use various software packages for personal and business applications with emphasis on word processing, electronic spreadsheet, Internet applications, and presentation tools.

BIS 2180 **Information Technology** **3 Credits**
Prerequisite: *BIS 1141 Business Software Applications*

Types of information technology including system unit, I/O devices, storage devices, communications devices, software, data and information processing, functions and their applications in business.

BIS 3315 **Programming and Algorithms** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

Concepts in programming based on selected programming languages, essential programming tools, logics and algorithms, as well as program coding and debugging.

BIS 3340 **Computer Tools in Research** **0 Credit**
Prerequisite: *BIS 1141 Business Software Applications*

Training of how to use statistical software tools to conduct research including data collection, processing and presentation, and software analytical features

BIS 3348 **Principles of Multimedia** **3 Credits**
Prerequisite: *BIS 1141 Business Software Applications*

Introduction to the theories and concepts of various multimedia types: image, audio, video and animation. The basic issue of creating and editing multimedia with the tools and techniques of digital media application programs will be covered. Students will learn both the aesthetic and technical aspects of multimedia design.

BIS 3349 **Fundamentals of Computer Graphics** **3 Credits**
Prerequisite: *BIS 1141 Business Software Applications*

Theories and practices of computer graphics, skills and techniques in implementation of the design by the use of various graphic software and programs.

BIS 3515 **Object-Oriented Concepts and Architecture** **3 Credits**
Prerequisites: *BIS 3315 Programming and Algorithms*

Advanced study of Object-oriented methodologies and programming for business information systems, language syntax, object-oriented theory, object-oriented programming in C#, error handling, graphical user Interface development, and software development for stand-alone or enterprise applications.

BIS 3567 **Human Computer Interaction** **3 Credits**
Prerequisites: *BIS 2180 Information Technology*

Techniques and tools for the analysis, design, implementation and testing of human-computer interfaces, special topics such as user-centered approaches to software requirements analysis, rapid prototyping and usability testing.

BIS 3577 **Online Media for Business** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

The effects and role of online media on marketing communications, public relations in products or services and also provides the opportunities, problems, tactics and strategies associated with incorporating electronic methods into the marketing functions. The new role of online media such as social media, search optimization (SEO), online video marketing in consumer behavior and implications for online strategies. Digital marketing metrics, analysis of the current online business models, and future trends in digital marketing

BIS 3587 **Principles of Electronic Commerce** **3 Credits**
Prerequisites: *BIS 1141 Business Software Applications*
BIS 2180 Information Technology

Principles of electronic commerce with emphasis on how to establish electronic commerce together with its necessary mechanism, HyperText Markup Language (HTML), web-developing tools, multimedia, skills and techniques in implementation of e-commerce, and multimedia concepts.

BIS 3588 **Digital Business Enterprise** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

Knowledge of information systems from both technological and managerial perspectives, how Information Technology creates a new infrastructure for the digital integration of a business enterprise ranging from a small company to multinational corporation (MNC), and management challenges and opportunities derived from information systems in order to resolve the current issues.

BIS 3589 **Analysis Tools in Finance and Accounting** **3 Credits**
Prerequisite: *BIS 1141 Business Software Applications*

Spreadsheet software for various finance and accounting applications, specific applications of financial statements, financial planning and analysis, capital budgeting, stock and bond valuation

BIS 3617 **Web Design and Programming** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

Design and management of websites for electronic business applications, aligning electronic business models with website designs, planning a website, programming for website, using web development and design tools, and evaluating website effectiveness.

BIS 3618 **Selected Programming Language** **3 Credits**
Prerequisite: *BIS 1141 Business Software Applications*

Programming language of particular interest, features and application of that specific language to create information systems and program debugging.

BIS 3635 **Database Systems** **3 Credits**
Prerequisites: *BIS 2180 Information Technology*

Data models with focus on relational database systems and design through entity-relationship diagram and normalization, database management system (DBMS), query, integrity and security of database.

BIS 3647 **Digital VDO Editing** **3 Credits**
Prerequisite: *BIS 3348 Principles of Multimedia*

Advanced usage of VDO editing software package as a tool to develop motion picture presentation, digital video, storyboard, motion effect, and audio effect.

BIS 3655 **Data Communications and Networking** **3 Credits**
Prerequisites: *BIS 2180 Information Technology*

Data communications and computer networks, communication devices, transmission media, various network protocols, network design, security, and management.

BIS 3666 **Information Systems Analysis and Design** **3 Credits**
Prerequisite: *BIS 3635 Database Systems*

Methodical approach by emphasizing strategies, tools and techniques of systems analysis and design, existing systems with DFD and feasibility study to design interfaces, databases, processes, management reports as well as planning deployment and maintenance.

BIS 3687 **Electronic Banking and Payment Systems** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

Financial challenges, risk, and opportunities of building electronic banking and its related businesses, sources of financing available for electronic business ventures, deal structures defining financing transactions of new electronic payment system, and emerging electronic banking and payment models.

BIS 4625 **Computer Organization and Architecture** **3 Credits**
Prerequisite: *BIS 2180 Information Technology*

Overview of computer organization and architecture including central processing unit, system interconnection, internal and external memory, cache memory, input/output, digital logic, computer arithmetic, instruction format, instruction set, and operating system.

BIS 4675 **Information Systems Project Management** **3 Credits**
Prerequisite: *Senior Standing (106 credits and above)*

Concepts of information system project management, how to oversee or take part in all project activities, project planning and modeling, budgeting, information technology management, and business objective realization.

BIS 4697 **Current Topics in Business Information Systems** **3 Credits**
Prerequisite: *Senior standing and completion of 106 credits*

Critical examination of current topics in the field of Business Information Systems. Discussion with entrepreneurs and leaders from technology companies to share real-world experiences across entrepreneurial settings. Demos and hands-on experiences with current business applications.

BIS 4698 **Selected Topics in Business Information Systems** **3 Credits**
Prerequisite: *By Consent of Instructor*

A selected topic in the field of Business Information Systems.

BIS 4699 **Advanced Topics in Business Information Systems** **3 Credits**
Prerequisite: *By Consent of Instructor*

A topic of advanced level in the field of Business Information Systems.

BIS 4718 **Web Applications Development** **3 Credits**
Prerequisites: *BIS 3617 Web Design and Programming*
BIS 3635 Database Systems

Development of web applications sites for database-driven Websites up and running in an organized and efficient way, database management with Web based DBMS, Application Server, and using web development and design tools in developing simple and complex web applications.

BIS 4747 **Graphics and Animation** **3 Credits**
Prerequisite: *BIS 3348 Principles of Multimedia*

Introduction of concepts and theories of 2-D /and 3-D animation, storyboard writing and the use of sophisticated computer animation tools to create the graphics artwork.

BIS 4748 **3-D Modeling and Animation** **3 Credits**
Prerequisite: *BIS 3348 Principles of Multimedia*

Principles and techniques of three dimensional computer modeling and animation, 3-D software interface, modeling, 3-D animation, textures, lighting and rendering, animation quality and application of key concepts from classic animation to 3D environment.

BIS 4757 **Local Area Network Concepts** **3 Credits**
Prerequisite: *BIS 3655 Data Communication and Networking*

Practical approach regarding comprehensive introduction of Local Area Networks including theory, concepts and installation, significant updating in LAN Technology, in-depth knowledge on Client/ Server technology, and its protocol and standards.

BIS 4766 **Business Process Reengineering** **3 Credits**
Prerequisite: *BIS 3666 Information Systems Analysis and Design*

Design of an organization's structure and business processes, as well as the workflow applications by using information technologies to transform organizations and improve their performance and methods of introducing and implementing information technologies to enable organizational change

BIS 4787 **Data Structure** **3 Credits**
Prerequisite: *BIS 3515 Object-Oriented Concepts and Architecture*

Data structures course using the Java programming language. Basic concept of data structure; contiguous data type, stacks, queues, lists, trees, dictionary etc. Algorithm and manipulation of Information structure; recursion, sorting, and searching etc. Application of Data structure for business information systems.

BIS 4788 **Data Warehouse and Data Mining** **3 Credits**
Prerequisites: *BIS 3635 Database Systems*

Introduction to data warehousing design, data architecture and modeling, database design and database access, issues in data warehouse planning, design, implementation and administration, exploration of a contemporary data mining, tools and patterns in data mining and online analytical processing (OLAP).

BIS 4789 **Mobile Applications** **3 Credits**
Prerequisites: *BIS 3515 Object-Oriented Concept and Programming*

Fundamental concepts, programming framework, and software tools for mobile application software development, design and programming of mobile user interfaces, inter-activities communication, data persistency, network programming, telephony, geo-location, multimedia, security, and business development plan for mobile applications.

BIS 4848 **Integrated Multimedia Applications** **3 Credits**
Prerequisites: *BIS 3647 Digital VDO Editing and*
BIS 4747 Graphics and Animation

Concepts, strategies and techniques of interactive multimedia, which combines various forms of multimedia items, and practical project to allow hands-on experience in integrating multimedia work pieces as "hypermedia."

BIS 4858 **Information Systems Security** **3 Credits**
Prerequisite: *BIS 3655 Data Communications and Networking*

Overview of the procedures and technologies to secure business information systems by learning to identify information security risks, to understand legal and ethical issues, to apply security technologies such as encryption and firewall, and to implement information security controls and maintenance of information security. The concepts of information systems security planning and the development of policies are included.

BIS 4875 **Strategic Technology Management** **3 Credits**
Prerequisite: *Senior standing and Completion of at least 106 credits*

Technical foundations and significance of information systems to management, roles of information, people, management, and organization, information policies, network-oriented computing, and organizational change management as well as strategic information system, enterprise resource planning to support management action and decision-making.

BIS 4878 **Software Risk Management** **3 Credits**
Prerequisite: *BIS 3666 Information Systems Analysis and Design*

Practical techniques, concepts and methodologies of software development process, including analysis and design, efficient coding, testability, modular decomposition verification, debugging, and performance analysis.

BIS 4897 **Seminar in Business Information Systems** **3 Credits**
Prerequisite: *Senior standing and Completion of a 106 credits*

Critical examination of information and communication technology (ICT) in the realm of business. Students will read, present, discuss and debate on weekly readings on topics that cover both contemporary theories and practice.

BIS 4886 **Directed Study I** **3 Credits**
Prerequisite: *By Consent of Instructor*

A student may carry out a research topic directed by an appointed advisor.

BIS 4887 **Directed Study II** **3 Credits**
Prerequisite: *By Consent of Instructor*

A student may continue the research topic from Directed Study I or carry out a new research topic directed by an appointed advisor.

BIS 4996 **BIS Senior Project** **3 Credits**
Prerequisites: *BIS 3666 Information Systems Analysis and Design*
BIS 4675 Information Systems Project Management
Senior standing and completion of 106 credits

Research project for students to apply all the acquired knowledge in an information system development project including system design and computer application development based on a real business solution. Students must produce professional and system documentation, and defend their projects with the appointed committee

BS 1001 **General Chemistry** **3 Credits**

Fundamental chemistry, atomic theory and electronic structure of atom, bonding theory, stoichiometry, periodic table as a survey of representative and transition elements and periodic properties, gas and kinetic theory of gas, acids/bases chemistry including acid base chemical equilibrium, oxidation-reduction and basic thermodynamics.

BS 1002 **General Chemistry Laboratory** **1 Credit**
Prerequisite or Co-requisite: BS 1001 General Chemistry

Safety in laboratory and use of basic chemical instrument, experimentation techniques in measurement and accuracy, molecular structure, chemical reactions, determination of pH of solution and titration, relative quantity, colligative properties of solution, techniques and basic theory in qualitative analysis.

BS 1005 **Principles of Biology** **3 Credits**

Life, prokaryotic and eukaryotic cell structure and functions of organelle in the cells, cell division, and gamete production, pattern of inheritance, gene expression, energy and photosynthesis, study of animal cells and plant cells, ecology, behavioral science and evolution.

BS 1006 **Biology Laboratory** **1 Credit**
Prerequisite or Co-requisite: BS 1005 Principles of Biology

Laboratory corresponding to BS1005 Principles of Biology, general concepts of microscope usage, plant and animal cell structure, somatic cell division including the production of reproductive cells, energy and photosynthesis.

BS 1007 **Organic Chemistry** **3 Credits**

Fundamental theories of organic chemistry involving the classification of organic compounds according to their functional groups, nomenclature and structure, reactions of organic molecules including synthesis and reaction mechanisms.

BS 1008 **Organic Chemistry Laboratory** **1 Credit**
Prerequisite or Co-requisite: BS 1007 Organic Chemistry

Safety in laboratory and use of apparatus, physical characteristics of organic substances e.g. melting point, boiling point, solubility, and analytical techniques of organic substances e.g. separation, purification, and techniques used for the identification of functional groups in organic compounds.

BS 1101 **Calculus I for Bioscience** **3 Credits**

Changing of value with respect to factors, differentials, second and higher order differential, and basic differentiation, basic integration, indefinite and definite integration, and higher order integration, applications of basic calculus, i.e. sketching the curves, optimization, surrounded area by curves, volume of geometrics and calculus questions.

BS 1102 **Calculus II for Bioscience** **3 Credits**
Prerequisite: BS 1101 Calculus I for Bioscience

Multivariable function, changing of value of multivariable function with respect to factors, chain rules for multivariable function, partial derivative and its application; 3-D geometrics function by rectangular coordinate, cylindrical coordinate and spherical coordinate; evaluation of the area and volume of those 3-D geometric shapes, principles of vector in mathematics including basic vector operations, transition of general vector and vector-valued function, velocity, acceleration, direction of an objects, tangent vector, and normal vector, described by vector-valued function, and line integral.

BS 1201 **Physics for Bioscience** **3 Credits**

Basic knowledge of physics including units, vector, force and motion, Newtonian motion, work and energy, conservation of energy and momentum, fluids mechanics, internal energy and fundamental heat transfer, thermodynamics, waves and sound, electricity and magnetism, light and color and introduction to advance physics for bioscience.

BS 1202 **Physics Laboratory for Bioscience** **1 Credit**
Prerequisite or Co-requisite: BS 1201 Physics for Bioscience

Laboratory corresponding to BS1201 Physics for Bioscience.

BS 2004 **Analytical Chemistry** **3 Credits**
Prerequisite: *BS 1001 General Chemistry*

Quantitative chemical analysis, steps involved in the preparation and analysis of a sample, analysis techniques using gravimetric and volumetric methods; especially, acid-base titration, precipitation titration, redox titration as well as spectroscopy methods.

BS 2005 **Analytical Chemistry Laboratory** **1 Credit**
Prerequisite or Co-requisite: *BS 2004 Analytical Chemistry*

Chemistry analysis exercises emphasizing on quantitative chemical analysis of chemical samples by combining theories and techniques, including chemical sample preparation and analysis techniques using gravimetric and volumetric methods, especially acid-base titration, precipitation titration, redox titration technique.

BS 2006 **Basic Biochemistry** **3 Credits**
Prerequisite: *BS 1007 Organic Chemistry*

Structure, function and metabolism of biomolecules including carbohydrates, lipids, amino acids, protein and nucleic acids, characteristics, classification and functions of proteins, enzymes and vitamins, the introduction to gene regulation and genetic engineering.

BS 2007 **Basic Biochemistry Laboratory** **1 Credit**
Prerequisite or Co-requisite: *BS 2006 Basic Biochemistry*

Laboratory corresponding to BS 2006 Basic Biochemistry, preparation of buffers, analysis of biomolecules properties, use of laboratory equipment and instruments.

BS 2008 **Physical Chemistry** **3 Credits**
Prerequisite: *BS 1001 General Chemistry*

Unit conversions, physical properties of gas and kinetic theory of gas, energy and work, the first law of thermo-dynamics, entropy, the second and third laws of thermodynamics, free energy and applications of thermodynamics.

BS 2011 **Introduction to Microbiology** **3 Credits**
Prerequisites: *BS 1005 Principles of Biology*
and *BS 1006 Biology Laboratory*

Overview of microbiology in both theoretical and practical aspects, eukaryotic and prokaryotic microorganisms, viral biology, growth and metabolisms of microorganisms, microbial genetic, classification and identification of microbes, roles of microbes to human, environment and in the industries and corresponding laboratory sessions.

BS 2012 **Genetics** **3 Credits**
Co-requisite: *BS 2011 Introduction to Microbiology*

Principles of classical genetics, Mendel's principles, exception of Mendel, sex determination, sex linkage and chromosome mapping, molecular genetics which includes the structure and functions of DNA, DNA replication, transcription, translation, control of gene expression and extra chromosomal inheritance, and the study of evolutionary genetics, quantitative and qualitative genetics, and corresponding laboratory sessions.

BS 2013 **Engineering Drawing for Bioscience** **1 Credit**

Basic and standard of drawing, lettering, applied geometry, theory and technique of orthographic drawing, pictorial drawing, dimensioning, section view, and assembly drawing

BS 4001 **Ecology, Conservation and Environmentalism** **3 Credits**
Prerequisite: *BS 1005 Principles of Biology*

Biological productivity in ecosystem and limiting productivity and perturbation, interaction between species, factors in population growth and the ecological balance, protection activities of the environment from pollution or destruction concerning conservation, improvement and sustainability of natural resources.

BT 2011 **Introduction to Biotechnology** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry or*
Co-requisite: *BS 2011 Introduction to Microbiology*

Introduction and historical perspective of biotechnology, the relationship between traditional biotechnology and modern biotechnology, examples of application drawn from agriculture, medicine, and molecular biotechnology, commercial dimension of the discipline of biotechnology in market place.

BT 3013 **Introduction to Bioprocessing Engineering** **3 Credits**
Prerequisites: *BS 1102 Calculus II for Bioscience*
and *BS 2008 Physical Chemistry*

Introduction to chemical engineering principles importance of understanding bioprocess operation and bioreactor design, unit conversions, material and energy balances, fluid flow, heat and mass transfer, reaction kinetics, and bioreactor operation.

BT 3014 **Microbial Physiology** **3 Credits**
Prerequisite: *BS 2012 Genetics*

Microbial structures and functions to understand how physiology relates to microbial growth and survival. Bacteria are used as the primary model and are focused on the molecular aspect of cell growth, structure and functions, cell envelope, cellular metabolism and genetics, and corresponding laboratory sessions.

BT 3015 **Industrial Fermentation** **3 Credits**
Prerequisite: *BS 2011 Introduction to Microbiology*

Selection of microbial culture, and the use of microorganism for the production of industrial products, food products, enzymes, antibiotics and organic compounds, cultural improvement, emphasizing on the metabolic regulation of the pathways that generate fermentation products from yeast and other microbial fermentations, and genetic manipulation of industrial microorganisms, and corresponding laboratory sessions.

BT 3016 **Enzyme Technology** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry*

Structure and functions of enzymes, including enzyme kinetics, regulation and inhibition, effect of pH and temperature, production and extraction of enzymes by means of mechanical, physical or chemical disruption of plant, animal or microbial cells, techniques such as purification, immobilization and isolation of enzymes as catalysts, and corresponding laboratory sessions.

BT 3017 **Principles of Research** **3 Credits**

Introduction to research methodology, experimental design, hypothesis generation, literature review, collection and analysis of the data, use of spread sheet packages to perform statistical analysis, summarizing and writing a research report, presentation, and ethical principles of a researcher.

BT 3018 **Genetic Engineering** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry,*
BS 2007 Basic Biochemistry laboratory
and *BS 2012 Genetics*

Molecular biology and techniques of genetic engineering, application of enzymes, vectors, and host gene isolation, detection of recombinant genes, strategies of gene cloning, genomic libraries, cDNA synthesis, gene identification, application of genetic engineering, ethical issues in genetic engineering, and corresponding laboratory sessions.

CA 1001 **Introduction to Communication** **3 Credits**

Principles of communication, definition and types of communication, including principles of intrapersonal communication, interpersonal communication, small group communication, public communication and mass communication.

CA 1002 **Introduction to Photography and Cinematography** **3 Credits**

Basic theories and practice of photography and cinematography, uses of equipment, composition, principles of setting, types of lens through the applications in digital photography. Students will be assigned to create photographs suitable for various types of communication.

CA 1006 **Introduction to Journalism and Mass Communication** **3 Credits**

Concepts of mass communication and mass media, functions of mass communication, theories and effects of mass communication, principles of journalism such as news gathering and reporting, news flow, wire services, media differences in news coverage including ethical concerns.

CA 1012 **Macro-environment, Media Effect and Media Literacy** **3 Credits**

Elements and concepts of the macro-environment structure (political, economic, social, technological, legal, and environmental structures), its relationship to media and individuals, including the concepts of media literacy such as skills, tools, vocabularies to understand the important role media play in shaping, reflecting, and subverting the social realities, as well as skills of experiencing, interpreting, analyzing and making media products.

CA 2016 **Psychology for Persuasive Communication** **3 Credits**
Prerequisite: *CA 1001 Introduction to Communication*

Components, tools and applications of basic psychology and social psychology for persuasive communication, including the current concepts and practices.

CA 1017 **Introduction to Creative Communication Design** **3 Credits**

Basic principles and artistic elements of creative communication and of the relationships between them, creative and structural elements of short stories, poetry, and film, Idea generation and organization across media platform for story-telling, story-telling forms and techniques, principles and applications of structures and forms of story-telling including applicability of these elements to other creative media. Students will be assigned to express their understanding of the course content in the creation and presentation of works in different media.

CA 2003 **Presentation Technique** **3 Credits**

Various techniques in presentation, public speaking and the use of audio-visual equipment in presentations to help students develop communication skills.

CA 2004 **Introduction to Advertising** **3 Credits**

Theories in advertising and basic methods of advertising, role of advertising, products and services to consumers, analysis of products, markets and consumers, process of advertising, advertising planning, selection of media, judgment of advertising execution, creation of advertisements, function and services of advertising agency, ethics and responsibility in advertising.

CA 2005 **Introduction to Public Relations** **3 Credits**

Basic principles of public relations, process of public relations, target group and equipment in public relations work, characteristics of public relations in organizations, such as business organizations, government departments and public charity organizations, including ethics for public relations.

CA 2007 **Introduction to New Media and Broadcasting** **3 Credits**

Influential histories of communications media and technological development, focusing on the shift from analog to digital practices and cultures that began mid-century and continues to the present, the development of radio, television and new media, general program production, function and relationship between different personnel involved, including basic production of new media projects.

CA 2013 **Utilization of Multimedia Tools** **3 Credits**
Prerequisite: *CA 1017 Introduction to Creative Communication Design*

Strategies to use broadcast and multimedia applications for communication, multimedia tools and various computer applications for creation of communication materials.

CA 2015 **Introduction to Performance Communication** **3 Credits**

Basic principles and the process of communication through performance, shows, events, etc. including work flow, personnel and job allocation needed in putting up a performance as well as considerations to be made for a stage and a broadcast.

CA 2016 **Psychology for Persuasive Communication** **3 Credits**
Prerequisite: *CA 1001 Introduction to Communication*

Components, tools and applications of basic psychology and social psychology for persuasive communication, including the current concepts and practices.

CA 2018 **Consumer Insight** **3 Credits**
Prerequisite: *CA 2016 Psychology for Persuasive Communication*

Framework for customer insights, aspect of consumer decision-making and application of these insights into communication and marketing propositions, fundamentals of customer value management, research tools and techniques for developing customer knowledge, customer insights and for becoming more customer-focused in the context of all communication campaign such as advertising, public relations, performance communication as well as the new media communication.

CA 3011 **Communication Arts Research** **3 Credits**
Prerequisite: *BG 1203 Fundamentals of Statistics*

Principles and methods of research process, framework, and methodology, including application of methods in research for development of projects in communication campaign.

CA 4010 **Law and Ethical Concerns for Communication** **3 Credits**

Freedom, rights, duties, responsibilities and ethical considerations of communication professionals, libel law, printing regulation, copyright law, advertising regulations and self-regulations, telecommunication and broadcasting regulations, internet regulations, rating and censorship of entertainment materials.

CE 2102 **Data Structure and Algorithms** **3 Credits**

Various type of data structure, e.g., array, string, stack, queue, dequeue, tree, binary tree, B-tree, AVL – tree; data searching and sorting, storage allocation; coding; table handling.

CE 2703 **Introduction to Computer Systems** **3 Credits**

Digital computer organization, memory unit, input-output device units, A/D conversion, D/A conversion, computer interface, procedure control, multi-utilization, multiprogramming, multiprocessing, on-line computer systems, processing program, system design.

CE 2704 **Digital Logic Design** **3 Credits**
Prerequisite: *EE 3601 Electronics Circuit Design*
or *EE 2605 Engineering Electronics*

Number system, logic combination, logic systems and Boolean algebra, comparator, Karnaugh map, tabulation method, combination logic circuit, adder, subtract, multiple output circuits, encoder, decoder, multiplexer, demultiplexer, ROMD, sequential circuits: synchronous and asynchronous circuits, flip-flops, counter circuits, registers.

CE 2705 **Digital Logic Design Laboratory** **1 Credit**
Prerequisite or Co-requisite: *CE 2704 Digital Logic Design.*

Experiments on the designs of Gate, digital and switching circuits, interconnection of logic modules, counter, control circuits, arithmetic units, memories and small computer circuits.

CE 2709 **Computer Architecture** **3 Credits**
Prerequisite: *CE 2703 Introduction to Computer Systems*
CE 2704 Digital Logic Design

Architecture of a general-purpose computer, design methodology, basic concepts of computer control, memory hierarchies, input-output organization, advanced computer architecture.

CE 3001 **Commercial Application Programming** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Language fundamentals, Library IDE (Integrated Development Environment) and high-level languages used in developing a commercial application.

CE 3103 **Computer Operating Systems** **3 Credits**
Prerequisite: *BG 1205 Calculus II*
CE 2101 Introduction to Data Structure
or *CE 2102 Data Structure and Algorithms*

Components and types of operating systems, command interpreter, management of main storage, file storage, data management, I/O management, device management; resource protecting; freestanding systems, disk operating systems, real-time operating systems, multiprocessor operating systems.

CE 3104 **Software Engineering** **3 Credits**
Prerequisite: *CE 2101 Introduction Data Structure*
or *CE 2102 Data Structure and Algorithms*

Software design techniques; problem definition; function design; modular program; program design; hierarchy input and output process; detailed design; decision tables; pseudo code; debugging test data; software reliability; software maintenance; design and development of large scale software.

CE 3105 **Microprocessor Programming Using Assembly & C** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Computer architecture, operation and instruction; programming languages; assembly language programming; arithmetic programs; loops and arrays; mnemonic operations; subroutines; characteristic and operation of assemblers, interfacing assembly with the high-level language (C language), using C to interact with hardware.

CE 3106 **Programming Languages** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Definition of language including specification of syntax and semantics; programming techniques of selected languages, namely, BASIC, FORTRAN, PL/1, PASCAL; language structure, data types, run-time environment.

CE 3108 **Database Management Systems** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Models and theories of database design: hierarchical, network, and relational models; data description languages; query facilities, data integrity and file security.

CE 3111 **Design and Analysis of Algorithms** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Techniques of design and analysis of algorithms for internal and external sorting, searching and margins; NP-hard problems.

CE 3707 **Microprocessor Systems Design** **3 Credits**
Prerequisite: *CE 2709 Computer Architecture*

Microprocessor architecture; control unit; memory; input-output units; microprocessor construction; registers; index and stack pointers; addressing modes; interfacing techniques (RAM, ROM, ...); micro-processor programming.

CE 3708 **Microprocessor Systems Design Laboratory** **1 Credit**
Prerequisite or Co-requisite: *CE 3707 Microprocessor Systems Design*

Microprocessor and computer hardware experiments; machine and assembly language programming for microprocessors; instructive effect on hardware; digital design for microprocessor programming.

CE 3901 **Digital Audio/Video Coding Technique** **3 Credits**

Basics technique of audio/video encoding.

CE 4001 **Software Development Laboratory** **2 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Practice of software implementation. One software project will be assigned as case study.

CE 4002 **Introduction to Broadcasting Technology** **3 Credits**
Prerequisite: *CE 4228 Data Communication and Networking*

Current technology using in the broadcasting technology e.g. Broadcasts protocol, video editing technology.

CE 4106 **Object-Orient Programming** **3 Credits**
Prerequisite: *CE 3106 Programming Languages*

Object-oriented design and object-oriented software construction; design and construct; classes; dynamic blinding, replacement and refinement; polymorphism analysis; frameworks and design patterns; object-oriented software engineering.

CE 4108 **Operations Research** **3 Credits**
Prerequisite: *BG 2207 Engineering Mathematics*

Scientific methods of operations research, linear programming, dynamic programming, game theory, queuing theory, simulation, and applications of these techniques to industrial operations.

CE 4109 **Information Systems Analysis and Design** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Data and information; data processing system; information system design; data storage and data classification; error detection; file and form design, sequential, indexed, VSAM, ISAM.

CE 4110 **Compilers** **3 Credits**
Prerequisite: *CE 3106 Programming Languages*

Programming language structures; compiling systems, lexical analysis, syntax and semantics analysis, parsors, symbol table, error diagnostics and recovery, code generation, examples of typical compilers.

CE 4114 **Data Mining** **3 Credits**
Prerequisite: *CE 3108 Database Management Systems*

Fundamental concepts of data mining; data mining methodologies; classification; association rules; clustering.

CE 4201 **Image Processing and Computer Vision** **3 Credits**
Prerequisite: *CE 1100 Computer Programming for Engineer*
or *BG 1220 Fundamental of Computer Processing*
or *BG 1221 Computer Programming or Equivalent*

Introduction to digital image processing including such topics as digital image representation, analysis of images represented in different formats, edge detection, image segmentation, object recognition, motion analysis.

CE 4207 **System and Network Programming** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Syntax and semantics of C++ applied to object oriented programming concept of abstract data type, classes, data hiding, polymorphism and inheritance. General introduction to UNIX operating system and UNIX file system, and use of UNIX system calls in C++.

CE 4221 **Network Applications and Technology** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*

Internet/Intranet technology, Web technology, protocols, and applications including HTML, OGL, Java, database, security, Internet engineering effort, parameters of the technical Internet/Intranet environment, contributing technologies of today's Internet/Intranet, new directions already emerging, and surveying the imminent technologies shortly created and brand new telecommunications environment quite different from today's paradigm.

CE 4223 **Advanced Computer Networks** **3 Credits**
Prerequisite: *CE 4222 Computer Networks*
or *CE 4228 Data Communication and Networking*

Hardware and software organization for computer communication networks, using the 7-layer Open System Interconnection Reference Model and IP protocol suite as a basis for study, typical designs for computer network protocols from the hardware through the communications software and application software levels, using LAN, TCP/IP and OSI protocols as examples including internetworking concept and technology.

CE 4224 **Telecommunication Networks Laboratory** **1 Credit**
Prerequisite: *Completion of 90 Credits*

Setup and test of LAN network (Ethernet), install and setup the Network Operating System, window NT, Novell NetWare, and UNIX, including network management system, network printer, file transfer etc. Setup and operation of Internet Server and Client.

CE 4225 **Computer and Network Security** **3 Credits**
Prerequisite: *CE 4222 Computer Networks*
or *CE 4228 Data Communication and Networking*

Security techniques for both network and database; cryptography technique; concept, scheme, secret key; public key, Hash algorithm, authentication and digital signature; Firewalls World Wide Web security, and Internet security protocol in both theory and practice.

CE 4226 **Network Systems Analysis and Design** **3 Credits**
Prerequisite: *CE 4222 Computer Networks*
or *CE 4228 Data Communication and Networking*

Analysis and design of networks; methods to analyze the existing networks, redesign the existing network or design and evaluate the network; queuing theory, traffic analysis, security, reliability, availability and flexibility.

CE 4227 **Mobile and Wireless Networks** **3 Credits**
Prerequisite: *CE 4222 Computer Networks*
or *CE 4228 Data Communication and Networking*

Mobile cellular phone systems, wireless data networks with an emphasis on protocols above the physical layer, multiple access control, mobility management, hand-over, roaming, routing, transport protocol, security, network planning, and capacity estimation.

CE 4228 **Data Communication and Networking** **3 Credits**
Prerequisite: *TE 3000 Principles of Communications*
or *TE 3003 Fundamental of Communication Systems*

Introduction to data communications and networks; layered network architecture; point-to-point protocols and links; delay models in data networks; multi-access communication; routing in data networks; data flow control; data security.

CE 4711 **Microcomputer Interfacing Laboratory** **1 Credit**
Prerequisite: *CE 3708 Microprocessor Systems Design Laboratory*

Techniques of microcomputer interfacing; A/D and D/A conversions; parallel interface; CRT character generator; direct memory access; stepping motor; modem; single chip microcomputer;

CE 4713 **Advanced Computer Architecture** **3 Credits**
Prerequisite: *CE 2709 Computer Architecture*

Microcomputer, minicomputer and mainframe architectures; computer system organizations pipeline processors, stack, multi-processors.

CE 4714 **Fault-Tolerant Computer** **3 Credits**
Prerequisite: *CE 2704 Digital Logic Design*

Maintainable and diagnosable design techniques; test generation algorithms; Boolean difference; simulation for design verification; self-checking logic circuits; error detection and correction codes; redundancy techniques; design of simplified testing.

CE 4715 **Artificial Intelligence** **3 Credits**
Prerequisite: *CE 2101 Introduction to Data Structure*
or *CE 2102 Data Structure and Algorithms*
and *CE 2703 Introduction to Computer Systems*

Programming languages; LISP, PROLOG; evolution of AI; grammar and languages; survey of current AI techniques; natural language, question, answering and inference; visual perception.

CE 4901 **Computer and Network Engineering Project I** **1 Credit**
Prerequisite: *Completion of 100 Credits*

Study and development of project in Computer and Network Engineering. Students must submit reports at the end of the semester.

CE 4902 **Computer and Network Engineering Project II** **2 Credits**
Prerequisite: *CE 4901 Computer and Network Engineering Project I*

Continuation of project done in Computer and Network Engineering Project I. Report is also required at the end of the semester.

CE 4903 **Advanced Topics in Computer Engineering** **3 Credits**
Prerequisite: *Completion of 90 Credits with the consent of the Chairperson*

Topic of current interest and new developments on computer engineering.

CE 4904 **Special Problems in Computer Engineering** **3 Credits**
Prerequisite: *Completion of 90 Credits with the consent of the Chairperson*

Investigation of special problems assigned by the instructor with the consent of the Faculty; a written report is required.

CEL 1101 **Sight Reading Lab I** **1 Credit**

Introductory lab for musicians to further develop listening skills, reading notation, concepts of rhythm, intervals, chord changes, time-feels, and grooves applied to singing rhythms and pitches simultaneously; sight-reading which include lead sheets, sheet music, and specific arrangements.

CEL 1102 **Sight Reading Lab II** **1 Credit**
Prerequisite: *CEL 1101 Sight Reading Lab I*

A continuation of Sight Reading Lab I. Additional concentration on singing on chordtones, seventh chords, minor chords, and modes in different time-feels and grooves.

CEL 1510 **Pop/Rock Ensemble I** **1 Credit**

Small group performance of the song based on repertoire of pop and rock idioms. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 1511 **Jazz Ensemble I** **1 Credit**

Instrumental/vocal ensembles with focus on the performance of various jazz styles. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 1512 **Vocal Ensemble I** **1 Credit**

Instrumental/vocal ensembles with emphasis on songs and vocal repertoire. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 1513 **Funk/Fusion Ensemble I** **1 Credit**

Performance of funk and fusion arrangemented by contemporary groups as well as student compositions. Instrumentation: mixed winds, synthesizer, piano, guitar, bass, drums, and percussion.

CEL 1514 **Blues/R&B Ensemble I** **1 Credit**

Instrumental/vocal ensembles that focus on the performance of blues and rhythms & blues styles. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 1515 **Latin Ensemble I** **1 Credit**

Ensembles for the performance of Latin American music styles and Latin American rhythms. Instrumentation: mixed winds, bass, drums, guitar, and percussion.

CEL 2510 **Pop/Rock Ensemble II** **1 Credit**
Prerequisite: *CEL 1510 Pop/Rock Ensemble I*

Further development of small group performance of the song based on repertoire of pop and rock idioms. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 2511 **Jazz Ensemble II** **1 Credit**
Prerequisite: *CEL 1511 Jazz Ensemble I*

Further development of instrumental/vocal ensembles with focus on the performance of various jazz styles. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 2512 **Vocal Ensemble II** **1 Credit**
Prerequisite: *CEL 1512 Vocal Ensemble I*

Instrumental/vocal ensembles with emphasis on songs and vocal repertoire. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 2513 **Funk/Fusion Ensemble II** **1 Credit**
Prerequisite: *CEL 1513 Funk/Fusion Ensemble I*

Further development of performance of funk and fusion arrangemented by contemporary groups as well as student compositions. Instrumentation: mixed winds, synthesizer, piano, guitar, bass, drums, and percussion.

CEL 2514 **Blues/R&B Ensemble II** **1 Credit**
Prerequisite: *CEL 1514 Blues/R&B Ensemble I*

Further development of instrumental/vocal ensembles with focus on the performance of blues and rhythms & blues styles. Typical instrumentation: piano, bass, drums, guitar, vocals.

CEL 2515 **Latin Ensemble II** **1 Credit**
Prerequisite: *CEL 1515 Latin Ensemble I*

Further development of ensembles for the performance of Latin American music styles and Latin American rhythms. Instrumentation: mixed winds, bass, drums, guitar, percussion.

CET 1811 **Foundation Chinese I** **3 Credits**

Basic skills in listening, speaking, reading and writing in Mandarin: Mandarin phonetic system (Pinyin), pronunciation and conversation focusing on basic vocabulary

CET 1812 **Foundation Chinese II** **3 Credits**
Prerequisite: *CET 1811 Foundation Chinese I*

More basic skills in listening, speaking, reading and writing in Mandarin: more vocabulary, Chinese characters and sentence patterns focusing on everyday conversation

CET 1821 **Chinese Listening and Speaking I** **3 Credits**

Listening to daily conversation and practice of pronunciation

CET 1822 **Chinese Listening and Speaking II** **3 Credits**
Prerequisite: *CET 1821 Chinese Listening and Speaking I*

Listening to topics related to daily life and practice of common daily dialogues in Mandarin

CET 1831 **Chinese Reading and Writing I** **3 Credits**

Practice of basic stroke orders and Chinese characters, writing basic sentences and reading basic published materials in Chinese

CET 1832 **Chinese Reading and Writing II** **3 Credits**
Prerequisite: *CET 1831 Chinese Reading & Writing I*

Writing paragraphs and speed reading on various kinds of Chinese articles

CET 1841 **Chinese Grammar and Usage I** **3 Credits**

Grammatical rules on word orders, sentence structures, interrogation, adverbials, sentences with verbs as predicate, and sentences with adjectival predicate

CET 1842 **Chinese Grammar and Usage II** **3 Credits**
Prerequisite: *CET 1841 Chinese Grammar and Usage I*

Additional grammatical rules on sentences with a subject-predicate phrase as its predicate, enumeration rules, reduplication of verbs, pivotal sentences, and grammatical supplements in Chinese language

CET 2813 **Intermediate Chinese I** **3 Credits**
Prerequisite: *CET 1812 Foundation Chinese II*

Intermediate skills in listening, speaking, reading and writing in Mandarin: vocabulary, complex sentence patterns, grammatical rules of intermediate level and Chinese expression in daily communication needs

CET 2814 **Intermediate Chinese II** **3 Credits**
Prerequisite: *CET 2813 Intermediate Chinese I*

More intermediate skills in listening, speaking, reading and writing in Mandarin: more vocabulary, complex sentence patterns, grammatical rules of intermediate level, expansion of Chinese expressions in oral communication

CET 2823 **Intermediate Chinese Listening and Speaking I** **3 Credits**
Prerequisite: *CET 1822 Chinese Listening and Speaking II*

Listening and conversation practice focusing on texts of intermediate level and self-expression on general topics

CET 2824 **Intermediate Chinese Listening and Speaking II** **3 Credits**
Prerequisite: *CET 2823 Intermediate Chinese Listening and Speaking I*

Further practice of listening and conversation focusing on texts of intermediate level on various topics of interest in modern life at a mother-tongue speed

CET 2833 **Intermediate Chinese Reading and Writing I** **3 Credits**
Prerequisite: *CET 1832 Chinese Reading and Writing II*

Reading business-related articles, correspondences and contracts, including writing simple diaries and essays

CET 2834 **Intermediate Chinese Reading and Writing II** **3 Credits**
Prerequisite: *CET 2833 Intermediate Chinese Reading and Writing I*

Further reading of business-related articles, technical articles, Chinese press reports and writing reports and articles

CET 2851 **Chinese for Business I** **3 Credits**
Prerequisite: *CET 1842 Chinese Grammar and Usage II*

Practice of four language skills on the usage of Chinese in business environments

CET 2852 **Chinese for Business II** **3 Credits**
Prerequisite: *CET 2851 Chinese for Business I*

Conversation and writing in business contexts and reading business reports

CET 3815 **Advanced Chinese I** **3 Credits**
Prerequisite: *CET 2814 Intermediate Chinese II*

Advanced skills in listening, speaking, reading and writing in Mandarin, advanced vocabulary and grammatical rules and practice of four language skills at the advanced level

CET 3816 **Advanced Chinese II** **3 Credits**
Prerequisite: *CET 3815 Advanced Chinese I*

More advanced skills in listening, speaking, reading and writing in Mandarin, expansion of the vocabulary and grammatical rules of advanced level, introduction to practical Chinese in business, economy and trade

CET 3851 **Chinese for Economy and Trade I** **3 Credits**
Prerequisite: *CET 2852 Chinese for Business II*

Basic knowledge of economy and trade in Chinese and practice of four language skills in the contexts of economy and trade

CET 3852 **Chinese for Economy and Trade II** **3 Credits**
Prerequisite: *CET 3851 Chinese for Economy and Trade I*

Vocabulary and expressions in international trade and economy focusing on speaking and reading skills

CET 3853 **Business Writing in Chinese I** **3 Credits**
Prerequisite: *CET 2814 Intermediate Chinese I*

Vocabulary and formats in writing business documents

CET 3854 **Business Writing in Chinese II** **3 Credits**
Prerequisite: *CET 3853 Business Writing in Chinese I*

Vocabulary and formats in writing business documents in international trade environments and writing reports for business presentations

CET 3862 **Chinese for Business Conversation I** **3 Credits**
Prerequisite: *CET 2814 Intermediate Chinese II*

Chinese oral communication in formal business encounters

CET 3863 **Chinese for Business Conversation II** **3 Credits**
Prerequisite: *CET 3862 Chinese for Business Conversation I*

Conversation of the more complex genres of business and trade focusing on international trade

CET 4853 **Chinese for Economy and Trade III** **3 Credits**
Prerequisite: *CET 3852 Chinese for Economy and Trade II*

Vocabulary and expressions in international trade and economy focusing on writing skills

CET 4854 **Thai-Chinese Translation in Economy and Trade** **3 Credits**
Prerequisite: *CET 3816 Advanced Chinese II*

Translation from Thai into Chinese on economy and trade topics, methodology of translation from Thai to Chinese focusing on business-related texts

CET 4861 **Business Negotiation in Chinese** **3 Credits**
Prerequisite: *CET 3816 Advanced Chinese II*

Basic knowledge and understanding about international trade and the usage of Chinese language in business negotiation

CET 4871 **Principles of Economics in Chinese** **3 Credits**
Prerequisite: *CET 3816 Advanced Chinese II*

Introduction of micro and macroeconomics principles and various basic theories of economics in Chinese

CET 4872 **Contemporary Chinese Economy and Trade** **3 Credits**
Prerequisite: *CET 3816 Advanced Chinese II*

Directions and policies of the present macroeconomic and trade situation of China

CET 4873 **Reading Comprehension on Economy and Trade** **3 Credits**
Prerequisite: *CET 3816 Advanced Chinese II*

Further reading of texts related to business, economy and trade and writing concise reports from the articles

CET 4874 **Directed Studies in Economy and Trade** **3 Credits**
Prerequisite: *CET 3854 Business Writing in Chinese II*

Topics related to conducting business in mainland China, Chinese corporate culture and Thai-Chinese relationship

CET 4881 **Business Research Methodology in Chinese** **3 Credits**
Prerequisite: *CET 3854 Business Writing in Chinese II*

Basic knowledge in business research paper writing, methods of research paper writing, research of information on relevant business topics.

CET 4882 **Business Research Writing in Chinese** **3 Credits**
Prerequisite: *CET 4881 Business Research Methodology in Chinese*

Writing Chinese papers from actual business research

CGI 1201 **Graphics Design Studio I** **3 Credits**

Fundamentals of idea development for creating the moving image, principles of storyboarding, character design and set design, criticism on the short story and scene development.

CGI 2202 **Introduction to Motion Picture and Animation** **3 Credits**

Fundamentals of video production techniques and overview of film and moving images. By combining theory and hands-on exercises, students are expected to develop the technical, analytical and critical foundations necessary in the video preproduction, production and postproduction process. Students may be required to produce a variety of short film projects.

CGI 2203 **Computer Graphics Design Studio II** **1 Credit**
Prerequisite: *CGI 1201 Computer Graphics Design Studio I*

Fundamentals of movement in 2 dimension drawing, principles of animation in theory and application to the 2 dimensional animations such as cell animation, including required criticisms on the story and character development are required.

CGI 2204 **Introduction to 3D Modeling** **3 Credits**
Prerequisite: *ART 1208 Computer Graphics Foundation*

Principles of 3-D space and 3 dimensional modeling techniques, such as object modeling, procedures for texture mapping, lighting and rendering, construction of basic digital 3-D models of character and environment. Final render of 3D model is required for class to analyze and criticize in terms of technique and aesthetics.

CGI 2205 **Motion Graphics Design** **3 Credits**
Prerequisite: *ART 1208 Computer Graphics Foundation*

Concepts related to motion graphics using still images, live-action video, and three-dimensional computer graphics in conjunction with software programs such as Adobe After Effects, Adobe Premiere, Adobe Photoshop, Vegas, and various sound tools.

CGI 2206 **Sound Design** **3 Credits**

Sound design principles as applied to motion pictures and interactive systems, phenomenology of sound with an introduction to acoustics, exploration of creative use of sound, introduction to field recording, use of digital audio workstations, use of original sound recordings from an extensive sound library.

CGI 2207 **Animation Concept and Story Telling** **3 Credits**

Introduction to diversity of animation aesthetics from industrial processes to individual personal expression, historical contexts and methods as well as contemporary trends and techniques. oral and written critique supported by practical investigation into personal aesthetic choice, examination of a number of approaches for adaptation of story content to cinematic form, how to transpose ideas through 2-D storyboards and animatics to 3-D asset creation for pre-visualizing storyline.

CGI 2208 **Computers Graphics Design Studio III** **3 Credits**
Prerequisite: *CGI 2203 Computer Graphics Design Studio II*

Techniques and concepts of animation such as stop motion, clay animation or claymation. Story development and short animation are required to fulfill these requirements.

CGI 3209 **3D Animation** **3 Credits**
Prerequisite: *CGI 2204 Introduction to 3D Modeling*

3-D Animation with emphasis on weight, pose and mechanics of character movement, use of 2-D animation skills to thumbnail and creation of rough animations that help push their 3-D poses, basic principles of modeling and rigging as applied to a series of very different characters. Students explore basic tools and apply them to various anatomical problems to find modeling and rigging solutions for character motion.

CGI 3210 **Computer Graphics Design Studio IV** **3 Credits**
Prerequisite: *CGI 2208 Computer Graphics Design Studio III*

Development of a uniqueness of story, sense of style and material as alternative for formulated classical animation or digital animation, employ imagery, objects and different media types to develop a method and use of media appropriate to the subject.

CGI 3211 **Cinematic Lighting and Rendering** **3 Credits**
Prerequisite: *CGI 3209 3D Animation*

Lighting and rendering issues needed in the animation production work flow, technical and aesthetic overview of lighting for studio, presentation, cinema and visual effects, as well as tonal evaluation of images, color temperature and color theory, technical issues which include shadows, soft shadow control, light types, lighting setup and control, raytracing, mental ray.

CGI 3212 **Computer Graphics Design Studio V** **3 Credits**
Prerequisite: *CGI 3210 Computer Graphics Design Studio IV*

Technical and aesthetic skill set of the advanced animation major. Through the exploration of projects, students continue to develop content delivery, story and technical mastery with emphasis on the process development throughout the finished animation. The technique of animation such as stop motion, claymation, cell-animation and 3D animation will be analyzed.

CGI 3213 **Digital Image for Digital Production** **3 Credits**
Prerequisites: *CGI 2207 Animation Concept and Story Telling*
CGI 2208 Computer Graphics Design Studio III

Digital image principles as applied to digital production, exploration of creative use of images in the real production of animation, film and visual effects with emphasis on techniques of photo retouching.

CGI 3214 **Movement Analysis and Integration** **3 Credits**
Prerequisites: *CGI 2207 Animation Concept and Story Telling*
CGI 2208 Computer Graphics Design Studio III

Character emotion and physical movement, realistic movements simply from a movement of a bouncing ball to a much more complicated walk cycle, professional choreography, how human body moves with the correct speed and gravity.

CGI 3215 **Animation Production** **3 Credits**
Prerequisite: *CGI 3209 3D Animation*

Importance of scene layout and how it will affect the final production. Students will create scene and the environment workflow based on a storyline for final compositing. The work will start from concept, then sketches, and final output in three-dimensional scenery.

CGI 3216 **Creative Process of Character Design and Setup** **3 Credits**
Prerequisites: *CGI 2204 Introduction to 3D Modeling*
CGI 3209 3D Animation

Fundamentals of character design such as, figure, anatomy, props, and costumes giving a character background. Students will design a character based on two-dimension sketches and drawings starting from an idea to fully developed character that is ready to be used in various fields such as games and animation. The final work will be a character design in three-dimension with full character setup and structure ready to animate.

CGI 3218 **Cinematic Setup** **3 Credits**
Prerequisites: *CGI 2207 Animation Concept and Story Telling*
CGI 2208 Computer Graphics Design Studio III

Art and science of pre-production and production from visualizing the narrative to lighting and shooting production phases. Students will receive an outcome that is ready for post-production.

CGI 3219 **Principles of Digital Effects** **3 Credits**
Prerequisites: *CGI 2207 Animation Concept and Story Telling*
CGI 2208 Computer Graphics Design Studio III

Fundamental approaches to compositing techniques from past to present.

CGI 3220 **Digital Compositing** **3 Credits**
Prerequisite: *CGI 3219 Principles of Digital Effects*

Students will learn to composite with digital photography based on the concepts of traditional compositing ideas. Students will learn to use digital SLR cameras, apply digital darkroom techniques, creatively manage transparency, and develop an understanding of lighting and perspective with the use of compositing software.

CGI 3221 **Visual Effects I** **3 Credits**
Prerequisite: *CGI 3219 Principles of Digital Effect*

Techniques of compositing especially rotoscoping, chroma-keying, matte creation, how to seamlessly blend CG and live action film together and render it with professional multi-pass rendering and time-based compositing techniques.

CGI 4217 **Digital Painting for Visual Effects** **3 Credits**
Prerequisite: *CGI 3213 Digital Image for Digital Production*

Development of a high-end concept art portfolio for film, animation and game industries. Assignments will focus on production illustrations for film and game pitches, environment illustrations and quick color keys for lighting reference. Students will tailor their work to the style of their selection from realism to a more stylized form as well as tips on working in the industry and portfolio critiques.

CGI 4222 **Visual Effects II** **3 Credits**
Prerequisite: *CGI 3222 Visual Effects I*

Relevant new techniques of visual effects industry including rendering, scripting, dynamic effects, layout and project management which will be utilized in creating the most professional output.

CGI 4223 **Art Thesis I** **3 Credits**
Prerequisite: *CGI 3212 Computer Graphics Design Studio V*

Students are required to choose their own topics related to their field of study and develop a project. The project has to be approved by the Computer Generated Imagery Thesis Committee. Students must complete the project and present it to the committee with all documents included.

CGI 4224 **Computer Graphics Design Portfolio** **3 Credits**
Prerequisite: *CGI 3212 Computer Graphics Design Studio V*

Preparation of students for professional situations through the creation of individual demo reels, interactive portfolio, video on-line, cross-platform developments and issues concerning aesthetics, resumes, web sites and portfolios by emphasizing on business structure, studio hierarchy in both areas (animation studio and interactive studio), production bidding, media distribution, employee evaluation and professional growth, aspects of business in order for students to attain and sustain a professional career.

CGI 4225 **Art Thesis II** **6 Credits**
Prerequisite: *CGI 4223 Art Thesis I*

The class project continues from CGI 4223 Art Thesis I. In this class students will concentrate on their technical orientation related to their project's achievement. Technical and aesthetic skill set of the advanced skill will be discussed through the exploration of projects. Students continue to develop content delivery, story and technical mastery with emphasis on the identification and utilization of individual strengths in the context of a production environment. Students must finish their final project and organize their Art Thesis Exhibition in public.

CIS 1401 **Keyboards Harmony I** **2 Credits**

Basic and intermediate keyboard playing skills involving keyboard techniques, keyboard voicings, grand staff and lead sheets reading. Students will be introduced to triads, melody, comping, seventh chords families, harmonic continuity, chord voicings and melody with accompaniment. Training of students in using the keyboard as a tool to improve their musical creativity.

CIS 1402 **Keyboards Harmony II** **2 Credits**
Prerequisite: *CIS 1401 Keyboard Harmony I*

Further development of CIS 1401-Keyboard Harmony I. Skills involving keyboard techniques, keyboard voicings, harmonic continuity, chord voicings, melody with accompaniment and also training of students in using the keyboard as a tool to improve their musical creativity.

CIS 1501 **Instrumental Instruction I** **2 Credits**

Development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice

CIS 1502 **Instrument Instruction II** **2 Credits**
Prerequisite: *CIS 1501 Instrument Instruction I*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 2503 **Instrument Instruction III** **2 Credits**
Prerequisite: *CIS 1502 Instrumental Instruction II*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 2504 **Instrument Instruction IV** **2 Credits**
Prerequisite: *CIS 2503 Instrumental Instruction III*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 3505 **Instrument Instruction V** **2 Credits**
Prerequisite: *CIS 2504 Instrumental Instruction IV*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 3506 **Instrument Instruction VI** **2 Credits**
Prerequisite: *CIS 3505 Instrumental Instruction V*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 4507 **Instrument Instruction VII** **2 Credits**
Prerequisite: *CIS 3506 Instrumental Instruction VI*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CIS 4508 **Instrument Instruction VIII** **2 Credits**
Prerequisite: *CIS 4507 Instrumental Instruction VII*

Further development of performance techniques and interpretation of fine art music. Principal instrument: guitar, bass, drums, piano, woodwind, brass or voice, based on student's selection of instrument and improvement from the previous course.

CMP 1201 **Contemporary Arranging I** **3 Credits**
Prerequisite: *MU 1112 Theory of Western Music II*

Musical concepts of melody, rhythm, harmony, and form as applied to the principles and techniques of writing and arranging for the rhythm section (drums, bass, guitar, keyboards, basic percussion) and a lead-line for a solo instrument, two horns (Trumpet plus alto or tenor saxophone), or voice with focus on the conceptual process of combining individual components to create a musically satisfying arrangement.

CMP 1202 **Contemporary Arranging II** **3 Credits**
Prerequisite: *CMP 1201 Contemporary Arranging I*

Properties of the trumpet, alto saxophone, tenor saxophone, trombone, and baritone saxophone, and the writing/arranging processes of standard and spread voicings, approach techniques, melodic embellishment, and guide tone backgrounds with focus on application of processes to soli and background writing for two-, three-, four- , and five- part combinations of these instruments.

CMP 2601 **Practicum in Music Technology** **3 Credits**
Prerequisite: *MU 1401 Computer for Musicians*

Development of skills and concepts necessary for the effective use of various music technology tools in sequencing and recording. Students will schedule weekly hands-on time in the MIDI lab.

CMP 2602 **Song Demo Production** **3 Credits**
Prerequisite: *CMP 2601 Practicum in Music Technology*

Acquisition of technical, interpersonal and group skills needed in the development of professional quality song demos. Hands-on knowledge in professional music production (pre production, production and post production protocol).

CMP 3105 **Traditional Harmony I** **2 Credits**
Prerequisite: *MU2112 Theory of Western Music IV*

Harmonic principles and techniques of the Classical art music tradition (Common Practice Period): diatonic harmonic function, secondary dominants, modulation, mode mixture, Neapolitan chord, augmented sixth chords, enharmonic functions, altered dominants, common-tone diminished seventh chords, chromatic mediants, coloristic chord successions and tonal harmony of the late 19th century. Development of part-writing skills, harmonization and score analysis.

CMP 3106 **Traditional Harmony II** **2 Credits**
Prerequisite: *CMP 3105 Traditional Harmony I*

Late Romantic and 20th century techniques: modes, artificial scales, free tertian and non-tertian harmony, polytonality, rhythmic methods, formal process, intervallic organization, serial procedures and an introduction to recent developments. Development of score analysis skills and analytical skills required for non-tonal music.

CMP 3204 **Arranging for Songwriting** **2 Credits**
Prerequisite: *CMP 1202 Contemporary Arranging II*

Writing effective arrangements around a lead vocal with various ensemble backing, including a contemporary rhythm section, background vocals, synthesizers, a small horn section, and a small string section including groove, style, introduction and fills, and use of various textures including background vocals, horns, strings, and solos.

CMP 3303 **Chord Scale Voicings for Arranging** **2 Credits**
Prerequisite: *CMP 1202 Contemporary Arranging II*

Five- and six-part writing for instruments. Application of voicings in seconds, thirds, and fourths. Upper-structure triads, clusters, and other non-mechanical voicings derived from chord scales.

CMP 3601 **Songwriting** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Fundamental songwriting techniques. Development of basic skill through the awareness of form, melody, harmony, bass line development, and rhythm. Lyric and vocal considerations. Students will complete projects in a variety of styles.

CMP 3602 **Advanced Songwriting** **2 Credits**
Prerequisite: *CMP 3601 Songwriting*

Integrations of Lyrics and melody. Continued exploration of songwriting techniques including modulation, modality, and formal devices. Extensive score analysis.

CMP 3603 **Music Production for all Media** **3 Credits**
Prerequisite: *CMP 2602 Song Demo Production*

Musical Instrument Digital Interface (MIDI) and its many applications, with an emphasis on sequencing. Synchronization to film, video, and other devices. Students will use computer-based workstations to complete a wide variety of musical projects.

CMP 3604 **Jingle Writing** **2 Credits**
Prerequisite: *CMP 2602 Song Demo Production Or*
CMP 3603 Music Production for all media

Various aspects related to jingle writing – composition, product image, instrumentation, and timing.

CMP 3611 **Vocal and Lyric Writing** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Writing and production techniques for vocals – background vocals, a cappella, Gospel, range, timbre, vocal production, notation and recording and exploration of the structural aspects of Lyric writing, focusing on the use of rhythm, rhyme, and form.

CMP 4109 **Reharmonization Techniques** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Practical techniques of functional, extended, and bass line reharmonization. Incomplete chord structures and reharmonization of diminished chord. Application of these techniques for the writing of turnarounds, intros, interludes, and modulations.

CMP 4110 **Jazz Composition** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Systematic approach to the art of composing in the jazz idiom. Exploration of melodic, harmonic, and rhythmic principles. Standard jazz song form. Analysis of jazz standards. Arranging considerations applied as a means of enhancing a composition. Projects for small jazz group required.

CMP 4117 **Counterpoint I** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Introduction to two-part counterpoint within a diatonic context.

CMP 4118 **Counterpoint II** **2 Credits**
Prerequisite: *CMP 4117 Counterpoint I*

Writing and analysis of two, three and four part counterpoint – canon, invention, fugue, and chorale prelude.

CN 0400 **Chinese for Beginners I** **3 Credits**

Chinese sound system, pronunciation, Chinese Romanization-Pinyin and everyday conversation focusing on basic vocabularies.

CN 0401 **Chinese for Beginners II** **3 Credits**
Prerequisite: *CN 0400 Chinese for Beginners I*

Basic vocabularies and sentence patterns to develop the listening and speaking skills in daily life.

CN 1400 **Introduction to Chinese** **3 Credits**

Mandarin sound system, pronunciation, writing of Chinese characters, fundamental Chinese grammar and everyday sentence patterns focusing on listening and speaking skills.

CN 1401 **Chinese I** **3 Credits**
Prerequisite: *CN 1400 Introduction to Chinese*

Basic conversations and texts concerning with everyday life to broaden basic vocabularies and Chinese grammar.

CN 1430 **Listening and Speaking in Chinese I** **1 Credit**

Practice of listening and speaking simple sentences and daily-life conversations with emphasis on correct pronunciation.

CN 1431 **Listening and Speaking in Chinese II** **1 Credit**
Prerequisite: *CN 1430 Listening and Speaking in Chinese I*

Practice of listening and speaking conversations in everyday situation focusing on fluency.

CN 2401 **Chinese II** **3 Credits**
Prerequisite: *CN 1401 Chinese I*

Conversations and texts in the intermediate level to expand the number of vocabularies and knowledge of grammatical structures.

CN 2402 **Chinese III** **3 Credits**
Prerequisite: *CN 2401 Chinese II*

Practical exercises in four language skills focusing on grammatical points and oral expressions, and reading texts on Chinese life and culture.

CN 2431 **Chinese Oral Comprehension and Expression I** **2 Credits**
Prerequisite: *CN 1431 Listening and Speaking in Chinese II*

Listening to topics related to general interests and oral practice of summary on the selected topics.

CN 2432 **Chinese Oral Comprehension and Expression II** **2 Credits**
Prerequisite: *CN 2431 Chinese Oral Comprehension and Expression I*

Listening to conversations and texts related to Chinese culture and current situations and practice of recounting events and stories from the selected topics and actual experience.

CN 3403 **Chinese IV** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Reading of academic texts, practice of writing a short paragraph, and introduction to literary Chinese : vocabulary, expressions, sentence structures, and idiomatic usage.

CN 3410 **Business Communication in Chinese** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Technical terms and formats in business writing, various forms of business correspondences, resumes, agenda, minutes, memoranda and product descriptions.

CN 3430 **Chinese Conversation and Discussion I** **3 Credits**
Prerequisite: *CN 2432 Chinese Oral Comprehension and Expression II*

Practice of conversations on topics related to academic and career purposes with emphasis on discussion skills.

CN 3432 **Chinese Conversation and Discussion II** **3 Credits**
Prerequisite: *CN 3430 Chinese Conversation and Discussion I*

Practice of conversations on business topics and development of fluency and accuracy in discussion.

CN 3433 **Chinese from Audio-Visual Media** **3 Credits**
Prerequisite: *CN 3430 Chinese Conversation and Discussion I*

Modern Chinese ways of life from audio-visual aids, and practice of recounting, analytical and discussion skills.

CN 3441 **Chinese Reading and Oral Report** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Development of reading skills of texts related to current political, social, economic situations and practice of gathering information and presenting oral reports.

CN 3450 **Introduction to Chinese Writing** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Practice of writing correct sentences, notes, diaries, summaries and essays with emphasis on using the right Chinese words, idioms and expressions in the appropriate formats.

CN 3462 **Introduction to Chinese Culture** **3 Credits**
Prerequisite: *CN 3403 Chinese IV*

Development of Chinese culture from the Xia dynasty to the modern era focusing on significant historical events, ways of life and main accomplishments in the science, arts and literature and specific features of Chinese influence on the world.

CN 3470 **Translation I: Chinese-Thai** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Methods and techniques of translation from Chinese to Thai and practice of translation of sentences, paragraphs, articles and texts.

CN 3480 **Chinese for Secretaries** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Knowledge of secretarial duties in Chinese, practice of spoken and written Chinese in secretarial contexts, and writing messages, appointments, work schedules, memoranda, agenda and minutes.

CN 3481 **Chinese for Tourism** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

General knowledge and Chinese terminology in tourism industry, description of Thailand's tourist attractions in Chinese, duties and responsibilities of tour guides and practice of Chinese oral communication as a tour guide.

CN 3482 **Chinese for Hotels** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

General knowledge and Chinese terminology in hotel industry, duties and responsibilities of personnel in hotel industry and practice of Chinese communication in hotel industry context.

CN 3483 **Chinese for Service Industries** **3 Credits**
Prerequisite: *CN 2402 Chinese III*

Vocabulary, expressions, and conversations used in service industries: airlines, hospitals, restaurants, banks, and Immigration.

CN 4433 **Public Speaking in Chinese** **3 Credits**
Prerequisite: *CN 3432 Chinese Conversation and Discussion II*

Basic principles and practice of public speaking for persuasive purposes, selection and evaluation of materials for speech, thought organization, voice and non-verbal communicative means.

CN 4434 **Advanced Listening and Speaking in Chinese I** **3 Credits**
Prerequisite: *CN 3432 Chinese Conversation and Discussion II*

Listening to conversations and texts for business purposes and oral practice of presenting the information, idea and argumentation concisely and systematically.

CN 4435 **Advanced Listening and Speaking in Chinese II** **3 Credits**
Prerequisite: *CN 4434 Advanced Listening and Speaking in Chinese I*

Listening to texts in advanced level and practice of analyzing and criticizing the selected texts and making oral presentation.

CN 4440 **Reading in Business Chinese** **3 Credits**
Prerequisite: *CN 3403 Chinese IV*

Development of reading proficiency in business-related materials, writing summaries and reviews.

CN 4442 **Reading in Chinese Newspapers** **3 Credits**
Prerequisite: *CN 3403 Chinese IV*

Reading and analyzing of various newspaper articles and understanding of expressions and styles used in news writing.

CN 4460 **Survey of Chinese Literature** **3 Credits**
Prerequisite: *CN 3403 Chinese IV*

Overall development of Chinese literature from the beginning to the present day, and reading selections in prose, poetry, fiction and drama.

CN 4471 **Translation II: Thai-Chinese** **3 Credits**
Prerequisite: *CN 3470 Translation I: Chinese-Thai*

Methods and techniques of translation from Thai to Chinese and practice of translation of sentences, paragraphs, articles and texts.

CN 4491 **Seminar on Selected Topics** **3 Credits**
Prerequisite: *Consent of Instructor*

Discussion of selected topics in using Chinese or business Chinese and current issues of interest.

CPS 1101 **Jazz Improvisation I** **2 Credits**

Basic concepts of improvisation: techniques, scales, and analysis of classic solos in a variety of idioms, including but not limited to Blues, Rock, Country, and Ethnic traditions, assimilation of these influences into what is commonly called "Jazz Improvisation". Students will complete 6 projects per semester, using computer and/or live performances in class.

CPS 1102 **Jazz Improvisation II** **2 Credits**
Prerequisite: *CMP 1101 Jazz Improvisation I*

Further development of improvising skills. Continuation of computer and/or live performances in class.

CPS 2101 **Jazz Improvisation III** **2 Credits**
Prerequisite: *CMP 1102 Jazz Improvisation II*

Further development of improvising skill. Continuation of computer and/or live performances in class with primary emphasis on Jazz and Fusion Jazz improve techniques.

CPS 3401 **Performance Ear Training I** **2 Credits**
Prerequisite: *MU 0102 Ear Training II*

Recognizing pitch, rhythm, harmony, and timbre by ear with emphasis on practical performance experience and utilization of the student's instrument in class, dictation, sight singing, transcription, and memorization projects.

CPS 3402 **Performance Ear Training II** **2 Credits**
Prerequisite: *CPS 3401 Performance Ear Training I*

Continuation of Performance Ear Training I. Development of recognizing pitch, rhythm, harmony, and timbre by ear with emphasis on practical performance experience and utilization of the student's instrument in class. Some dictation, sight singing, transcription, and memorization projects.

CPS 4401 **Jazz Recital** **2 Credits**
Prerequisite: *CIS 4507 Instrumental Instruction VII*

Preparation of repertoire for performance in public and at the recital workshop for performance majors.

DA 1121 **Basic Mathematics and Statistics** **3 Credits**

Basic foundation in mathematics and statistics such as algebra, trigonometry, collection of data, summarizing data in tabulation, graphical and numerical, and elementary of probability.

DA 2101 **Calculus I** **3 Credits**
Prerequisite: *DA 1121 Basic Mathematics and Statistics*

Rate of change, limits, finding limits and continuity, derivatives of function, chain rule, techniques of differentiation and its application, L'Hopital's rule. Integration, integration techniques and application of integrals.

DA 2102 **Calculus II** **3 Credits**
Prerequisite: *DA 2101 Calculus I*

Transcendental function and differential equations for the first order and the second order, integration techniques, improper integrals, infinite series, multivariable functions and their derivatives, and multiple integrals.

DA 2103 **Principles of Statistics** **3 Credits**
Prerequisite: *DA 1121 Basic Mathematics and Statistics*

Introduction of statistical methods such as collection of data, tabulation, statistical computation of average and variance, introduction to probability, sampling distribution, statistical estimation and test of hypotheses for one population and two populations, Analysis of Variance (ANOVA), and Chi-square test.

DA 2201 **Linear Algebra** **3 Credits**
Prerequisite: *DA 2101 Calculus I*

Systems of linear equations, matrix and determinants, vector in the plane and vector spaces, polar coordinate and graph, inner product spaces, Eigen values and diagonalization, quadratic forms, linear transformations.

DA 2203 **Probability and Statistical Methods** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Quantitative methods such as correlation analysis, linear regression, introduction to time series forecasting, non-parametric statistical methods, quality control and decision making.

DA 2204 **Statistical Packages** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Structures and uses of software packages, design of statistical software, choosing the statistical tools in data analysis, computation techniques and summarizing of data.

DA 3201 **Statistical Inferences and Theory of Probability** **3 Credits**
Prerequisite: *DA 2203 Probability and Statistical Methods*

Probability theory, conditional probability and independence, discrete and continuous distribution functions, joint distributions, expectations and variances of random variables, central limit theorems, inferential statistics, point estimation theories such as maximum likelihood, Bayes' estimator, unbiased and minimum variance estimator, interval estimations, and testing of hypotheses.

DA 3202 **Databases System and Data Warehouse Concepts** **3 Credits**

Basic concepts and elements of file and database systems and data-warehouse, database management systems and emerging database technologies and applications of database and information management systems.

DA 3203 **Nonparametric Methods** **3 Credits**

Non-parametric statistical test in the case of one sample, two dependent samples, two independent samples, k related samples, k independent samples, and measures of association.

DA 3301 **Principles of Data Collection Methods** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Characteristics of collecting data from survey and experimental designs, probability sampling methods and non-probability sampling methods, how to design an experimental study including statistical analysis of the data, and proper interpretation.

DA 3302 **Qualitative Research for Business and Application** **3 Credits**

Characteristics of designing and conducting qualitative research methods in business research including case study, focus group, in-depth survey, ethnography, content analysis, and laddering analysis.

DA 3303 **Quantitative Research for Business and Application** **3 Credits**

Prerequisite: *DA 2103 Principles of Statistics*

Characteristics of designing and conducting quantitative research methods in business research including of defining research problems, questionnaire design, data gathering techniques, sampling designs and fieldwork, statistical methods for analyzing data and report presentation.

DA 3304 **Intelligence Systems** **3 Credits**

Techniques and basic principles of artificial intelligence, the basic knowledge-based expert systems, tools for artificial intelligence development, the application of artificial intelligence in industries, product design, planning, finance, analysis, insurance, medication, engineering and other appropriate business. Each type of application will emphasize on information system and techniques used for particular type of business.

DA 3305 **Data Mining Methods** **3 Credits**

Introduction and terminologies of Data Mining, techniques for exploring to meaningful rules in the large quantities of data such as Association (Apiori, FP-Growth), Classification and Cluster (SOM, K-Mean, Hierachical).

DA 3306 **Statistical Forecasting Techniques I** **3 Credits**

Industrial and business forecasting techniques such as simple linear regression analysis, multiple linear regression analysis; time series analysis with decomposition methods, smoothing methods, the Box-Jenkins methodology for stationary data, and the application of forecasting techniques to industrial and business problems.

DA 3401 **Multivariate Methods** **3 Credits**

Multivariate techniques such as discriminant analysis, principal component analysis, factor analysis, multidimensional scaling, graphical exploration and representation of multivariate data, analysis of multivariate categorical data, MANOVA and uses of multivariate statistical computer packages.

DA 3402 **Data Analysis** **3 Credits**

Philosophy of exploratory data analysis in the case of multivariate data, time series data, multi-way tables, transforming data, missing data, include estimation and hypothesis testing of parameters, graphical displaying, and summarizing of data.

DA 4299 **Senior Project** **3 Credits**

Prerequisite: *The fourth-year student status with at least 100 Credits completed*

Specific project which requires students to apply the knowledge acquired to application of statistics in business, industry or science. The instructor will advise students throughout the project development. The students will have an oral examination on their project.

DA 4301 **Operations Research I** **3 Credits**

Prerequisite: *DA 2103 Principles of Statistics*

Linear programming, transportation problem, assignment problem, PERT/CPM techniques, inventory, decision theory and game theory.

DA 4302 **Operations Research II** **3 Credits**

Prerequisite: *DA 4301 Operations Research I*

Queuing theory, Markov chain, dynamic programming and non-linear programming.

DA 4303 **Counselor Workshop** **3 Credits**

Client-consultant relationship, consulting sessions, communication skills, professional ethics, teamwork, supervised consulting, developing models, searching the literature for relevant background material, case studies, presentation methods, report writing, and critical assessment.

DA 4304 **Customer Relationship Management and E-Business** **3 Credits**

Aspects of CRM, including developing a market-oriented strategy, innovation in products and services, sales and channels transformation, customer relationship marketing and customer care, how CRM links people, process, and technology to optimize an enterprise's revenue and profits and provide maximum customer satisfaction.

DA 4310 **Statistical Forecasting Techniques II** **3 Credits**
Prerequisite: *DA 3306 Statistical Forecasting Techniques I*

Non-linear multiple regression and its problems such as multicollinearity problem, autocorrelation problem etc., time series analysis with the Box-Jenkins methodology for nonstationary data and its problems such as autocorrelation problem etc., and application of forecasting techniques to industrial and business problems.

DA 4311 **Statistics for Quality Control** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Control chart for variables and control chart for attributes such as chart, R chart, S chart, p chart, and acceptance sampling plans.

DA 4319 **Introduction to Simulation** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Design and application of simulation for business or science by methods of queuing, models, Monte Carlo, stochastic process with application software package such as GPSS.

DA 4321 **Applied Statistics for Decision Making** **3 Credits**

Decision making under certainty and uncertainty, utility theory, group decisions, Mini-max method, Bayes' method.

DA 4380 **Selected Topics in Business Data Analysis** **3 Credits**
Prerequisite: *The fourth-year student sand by the instructor's consent*

Special topics that the department and instructors think appropriate for students for detailed study and research in business data analysis.

DA 4390 **Seminar in Business Data Analysis** **3 Credits**
Prerequisite: *The fourth-year students and by the instructor's consent*

Current applications of statistics in business data analysis. Experts in specialized areas from government or private sectors may be invited to give lectures on specialized topics. Each student will be required to present a paper for discussion.

ECO 1401 **Economic Reasoning** **3 Credits**

Economic way of thinking to examine development of economics, structure and framework of micro- and macro-economic theories, basic concepts in economic research analysis, concept of marginal analysis, externalities, perception of cost benefit analysis.

ECO 2501 **Principles of Microeconomics** **3 Credits**
Prerequisite: *ECO 1401 Economic Reasoning*

Allocation of scare resources in market economies, theory of consumption and production, demand, supply, market equilibrium, production, cost, roles of firms, market mechanisms to determine prices and efficiency of resources allocation.

ECO 2502 **Principles of Macroeconomics** **3 Credits**
Prerequisite: *ECO 1401 Economic Reasoning*

Principles of national income, macro-economic issues: unemployment, inflation, economic growth, economic fluctuations, level of interest rates, savings and investment, exchange rate and balance of payments, role of government fiscal and monetary policies influencing the economy.

ECO 2503 **Economy, Society and Government** **3 Credits**
Prerequisite: *ECO 1401 Economic Reasoning*

Interrelation between economy, society and government, influence of the government policies, and the range of government policies' impacts on both society and economy

ECO 3711 **Intermediate Microeconomics** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*

Theory of consumer choice: analysis of consumer preference and utility maximization, theory of production: production maximization, cost minimization and factor demands, market structure: price determination, competition, analysis of general equilibrium and welfare economics.

ECO 3712 **Intermediate Macroeconomics** **3 Credits**
Prerequisite: *ECO 2502 Principles of Macroeconomics*

Structure of macroeconomic models, relationship between aggregate demand and aggregate supply in determining general economic stability, growth, and employment, theory of income determination, growth theory, government economic policies in the closed and open economy , and implications of different theories for macroeconomic policy.

ECO 3713 **Economics of Money and Banking** **3 Credits**
Prerequisites: *ECO 2501 Principles of Microeconomics*
ECO 2502 Principles of Macroeconomics

Money and capital markets, role of bank and non-bank financial institutions, theories of money, time value of money, bonds, role of central bank, conduct of monetary policy in stabilizing the economy, and basic for IS-LM framework.

ECO 3714 **Mathematical Economics** **3 Credits**
Prerequisite: *BG 1230 Calculus*

Mathematical techniques: derivatives, differential equations, linear programming, matrix, and determinants to solve problems in economics, particular applications including solving system of equation supply and demand models, input – output models, marginal analysis, optimization problems.

ECO 3715 **Introduction to Econometrics** **3 Credits**
Prerequisite: *BG 2200 Statistics II and*
ECO 2502 Principles of Macroeconomics

Estimating economic relationships, analyzing economic data, building economic models, testing hypothesis, simple and multiple regression analysis, technical problems of multicollinearity, heteroscedasticity, autocorrelation, dummy variables and other error correction models and evaluating government and business policies through econometrics tools.

ECO 3716 **International Trade** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*

Theories and policies of international trade, neoclassical trade theory to modern trade theory, absolute advantage versus comparative advantage, H-O Model, Standard Trade Model, Inter- and Intra- Industry Trade, instruments of trade policies, trade policies and strategies in both developing countries and advanced countries, and economic integration.

ECO 3717 **Intermediate Microeconomics** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*
and *ECO 2502 Principles of Macroeconomics*

Application of economic tools to the analysis of management decisions with emphasis on demand analysis and forecasting, production and cost analysis, market structure and competitive analysis, game theory and competitive strategy, decision making under uncertainty, organization design.

ECO 3721 **Industrial Organization** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*

Analysis of firm behavior in imperfectly competitive market, relationship between industrial structure and performance of firms, impacts of technological change on costs, profitability and industrial structure, pricing strategy in different market structures, strategy of firms to create market power.

ECO 3722 **Business Cycles and Forecasting** **3 Credits**
Prerequisite: *ECO 2502 Principles of Macroeconomics*

Macroeconomic analysis of business cycle fluctuation, theories of business cycles, measurement of business cycles, and use of econometric and statistical techniques relevant to forecasting in a business environment.

ECO 3723 **Public Finance** **3 Credits**
Prerequisites: *ECO 2501 Principles of Microeconomics*
ECO 2502 Principles of Macroeconomics

Economic role of government with emphasis on public expenditure and taxation, budgetary policy and impacts of government policy on the economy, theory of taxation.

ECO 3724 **Comparative Economic Systems** **3 Credits**
Prerequisites: *ECO 2501 Principles of Microeconomics*
ECO 2502 Principles of Macroeconomics

Comparisons between the major economic systems in the world: capitalism, socialism and economies of less- and developing countries, operation of modern market economy, variants of capitalism, transformation of socialism into market economy, the Asian economy.

ECO 3725 **Financial Economics** **3 Credits**
Prerequisite: *ECO 3713 Economics of Money and Banking*

Applications of economic principles in the development of modern finance theory, theoretical models used finance, competitive market model, capital asset- pricing model, arbitrage and option pricing, models of firm, theory of financial structure of firm.

ECO 4711 **International Macroeconomics** **3 Credits**
Prerequisite: *ECO 3712 Intermediate Macroeconomics*

International monetary theory, macroeconomics in open economy, balance of payments, foreign exchange market, exchange rate systems, theories of exchange rate determination, international financial markets and instruments, international macroeconomic policies.

ECO 4712 **Economics of Strategy** **3 Credits**
Prerequisites: *ECO 3711 Intermediate Microeconomics*
or *ECO 3717 Managerial Economics*

Strategy from the perspective of economics, economies of scale and scope as sources of competitive advantage, analysis of vertical and horizontal integration, analysis of firm boundaries and diversification, industry and competitive analysis and competitive approaches, analysis of strategic positioning for competitive advantage, and sustaining competitive advantage strategies.

ECO 4721 **Project Evaluation** **3 Credits**
Prerequisites: *ECO 2501 Principles of Microeconomics*
FIN 3701 Corporate Finance

Feasibility study of investment project, application of economic and finance techniques to both discounted and non-discounted cash flow such as internal rate of return, net present value, pay-back period, cost–benefit analysis to evaluate the economic viability of business investment projects.

ECO 4722 **Economics of Human Resources** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*

Economic analysis of human resources management, traditional model of labor demand and labor supply, marginal productivity theory, theory of wage differentials and structure of earnings, human resources development and planning, provision of training and skills, human capital theory, labor relation and theory of bargaining.

ECO 4723 **Agricultural Economics and Agri-business** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*

Economic theory of agricultural sector, nature of supply, demand and production in agricultural products, market and price risks, market and industry structures, role of the financial market and future exchange in agricultural products, competitive strategy in the world market, and government intervention in agricultural sector.

ECO 4724 **Economics of E-business** **3 Credits**
Prerequisites: *BIS 2280 Information Technology*
ECO 2501 Principles of Microeconomics

Economic analysis of electronic business, linkage of e-business to economics, analysis of impacts of e-commerce on cost of goods and services, relationship between business and information technology, economic aspects of e-commerce, e-business, and e-government.

ECO 4725 **Economics of Sustainability** **3 Credits**
Prerequisite: *ECO 2501 Principles of Microeconomics*
and *ECO 2502 Principles of Macroeconomics*

Theoretical and empirical studies of the economic effects of national or local environmental policies around the world, costs and benefits of alternative environmental policies to deal with air pollution, water quality, toxic substances, solid waste, and global warming, pattern of resource use to meet human needs while preserving the environment.

ECO 4726 **Business and Government** **3 Credits**
Prerequisites: *ECO 2501 Principles of Microeconomics*
ECO 2502 Principles of Macroeconomics

Linkage between business sectors and government, impact of government policies (fiscal, monetary, trade and industrial policies) on business sectors, analysis and evaluation of impact and remedies, national income, business cycles, money supply, inflation, interest rates and financial assets.

ECO 4911 **Seminar in Economics** **3 Credits**
Prerequisites: *ECO 3711 Intermediate Microeconomics*
ECO 3712 Intermediate Macroeconomics,
MGT 3940 Business Research Methodology

Development of student's economic research, review of past economic research, economic research topic development, literature review, methodology, interpretation of economic results and evaluation of economic research results.

EE 2201 **Electric Circuits** **3 Credits**
Prerequisite: *BG 1205 Calculus II*
BG 1213 Physics II

Circuit elements, node and mesh analysis, circuit theorems, resistance, inductance, and capacitance, first and second order circuits, phasor diagram, AC power circuits, three- phase systems.

EE 2202 **Electric Circuits Laboratory** **1 Credit**
Prerequisite: *BG 1214 Physics Laboratory II*
Co-requisite: *EE 2201 Electric Circuits*

Laboratory works to be done according to EE 2201 Electric Circuits.

EE 2203 **Signals and Systems** **3 Credits**
Prerequisite: *BG 2207 Engineering Mathematics*
EE 2201 Electric Circuits

Continuous-time and discrete-time signal and system; linear time-invariant system (LTI); signal analysis using Fourier transform, Laplace transform, and Z-transform; applications of signal and system; modern techniques in signal and system analysis.

EE 2401 **Electromechanical Energy Conversion** **3 Credits**
Prerequisite: *EE 2201 Electric Circuits*

Principles of magnetic circuits, definition and interpretation of parameters, calculation of simple and complex magnetic circuits, principles of DC generator, induced electromotive force, armature winding, excitation, armature reaction, commutation, characteristics of DC generators, principles of DC motors and their characteristics, start and speed control of DC motors, principles of transformers, phasor diagram of transformer testings, transformer heat exchanger and ventilation, transformer banking in three phases system, auto transformer.

EE 2402 **Electromechanical Energy Conversion Laboratory** **1 Credit**
Co-requisite: *EE 2401 Electromechanical Energy Conversion*

Laboratory works to be done according to EE-2401 Electromechanical Energy Conversion.

EE 2605 **Engineering Electronics** **3 Credits**
Prerequisite: *BG 1213 Physics II*

Semiconductor devices; device current-voltage and frequency characteristics; analysis and design of diode circuits; analysis and design of BJT and MOS transistor circuits; operational amplifier and its applications.

EE 2606 **Engineering Electronics Laboratory** **1 Credit**
Co-requisite: *EE 2605 Engineering Electronics*

Laboratory works to be done according to EE 2605 Engineering Electronics.

EE 3301 **Electromagnetic Fields** **3 Credits**
Prerequisite: *BG 1205 Calculus II*
BG 1213 Physics II

Electrostatic fields; conductors and dielectrics; capacitance; convection and conduction currents; magnetostatic fields; time-varying electromagnetic fields; Maxwell's equations.

EE 3402 **Electrical Machines** **3 Credits**
Prerequisite: *EE 2401 Electromechanical Energy Conversion*

AC armature windings, revolving fields in multi-phase systems, structure of induction motors, principles of induction motors, equivalent circuits and circle diagram, starting methods and speed control, principles and characteristics of single-phase induction motors, AC generators, structure, excitation, AC generation voltage control, parallel operation of generators, synchronous motors; equivalent circuit and phasor diagram, motor characteristics at various excitations, power factor correction using synchronous motors.

EE 3403 **Electrical Machines Laboratory** **1 Credit**
Prerequisite or Corequisite: *EE 3402 Electrical Machines*

Laboratory works to be done according to EE 3402 Electrical Machines.

EE 3405 **Digital Control Systems** **3 Credits**
Prerequisite: *EE 3404 Feedback Control Systems*
or *EE 3406 Control Systems*

Z-transform, Pulse transfer function, Discrete equivalent to the continuous time systems, State-space models and digital controller designs, Problem with discretization and numerical round-off

EE 3406 **Control Systems** **3 Credits**
Prerequisite: *EE 2203 Signals and systems*

Mathematical models of systems, closed-loop and open-loop control system, transfer function, signal flow graphs, time-domain and frequency-domain analysis and design of control system; root locus, Nyquist plots; Bode plots, system stability.

EE 3601 **Electronic Circuit Design** **3 Credits**
Prerequisite: *EE 2603 Electronics Circuits Analysis*
or *EE 2605 Engineering Electronics*

Components of design process of electronic circuits, multiple-input operational amplifiers circuit design, power supply design, voltage regulator circuit design, wave shaping circuit design, Bipolar Junction Transistor)BJT) amplifier design, Field-effect Transistor (FET) amplifier design, power amplifier design, digital logic families and their circuits design.

EE 3602 **Electronic Circuit Design Laboratory** **1 Credit**
Prerequisite or Co-requisite: *EE 3601 Electronic Circuit Design*

Laboratory works to be done according to EE 3601 Engineering Electronic Circuit Design

EE 3606 **Electrical Instruments and Measurements** **3 Credits**
Prerequisite: *EE 2201 Electric Circuits*
and *EE 2601 Electronic Devices and Circuits*
or *EE 2605 Engineering Electronics*

Units and standard of electrical measurement; instrument classification and characteristics; measurement analysis; measurement of dc and ac current and voltage using analog and digital instruments; power, power factor, and energy measurement; the measurement of resistance, inductance, and capacitance; frequency and period/time - interval measurement; noises; transducers.

EE 3703 **Microprocessor** **3 Credits**
Prerequisite: *CE 2704 Digital Logic Design*

Microprocessor and microcontroller: architecture, hardware, software, and interfacing.

EE 3704 **Embedded Systems** **3 Credits**
Prerequisite: *EE 3703 Microprocessor*

Architecture, features and instruction sets of microcontrollers and DSP processors, interfacing techniques, requirements of power applications, external memory, peripherals, timers, DAC and ADC, sampling and real time considerations, programming, data acquisition.

EE 4201 **Network Theory** **3 Credits**
Prerequisite: *EE 2201 Electric Circuits*

Components of electric circuits; non-time-varying linear circuit, steady-state analysis for sinusoidal signals, graph network theory, mesh and node analysis, state equation, natural frequency, network function, four terminal network, positive-real function, driving point synthesis with R-R, R-C-L., one-port and two-port synthesis, Foster and Maclaurin network synthesis.

EE 4301 **Introduction to Electromagnetic Compatibility** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*

Concepts of Electromagnetic Interferences (EMI) and EMC definitions, sources of EMI and their characteristics, EMI couplings, EMI mitigation and control, EMC standards, EMC testing techniques.

EE4305 **Digital Signal Processing** **3 Credits**
Prerequisite: *EE 2203 Signals and Systems*

Basic concepts of digital signal processing, fourier transform revision, discrete-time fourier transform, fast fourier transform, digital signal filtering, analog-digital conversion, sampling process, digital-analog conversion, optimum quantization, design and construction of FIR and IIR, digital filter, effect of word length, responses to finite and infinite impulses.

EE 4401 **Electric Drive** **3 Credits**
Prerequisite: *EE 3402 Electrical Machines*

Development of electric drives, moment of electric drives, types of duties, electric braking, energy relation during starting and braking, calculation of motions of electric machines using analytical and graphical methods, calculations of motor ratings, important tracking machines, electric circuits and controls of traction machines, sample calculations, industrial applications of electric motors.

EE 4402 **Analysis and Design of Electrical Machines** **3 Credits**
Prerequisite: *EE 3402 Electrical Machines*

Electrical transient in synchronous and induction machines, repulsion motors, universal motors, special machines, overload and short-circuit protection of machines, introduction to generalized machines theory, design concept of electrical machines, sample design of some conventional electrical machines.

EE 4403 **Basic Mechatronics** **3 Credits**
Prerequisite: *ME 2210 Engineering Mechanics*
or *ME 2211 Engineering Mechanics I*
and *EE 2401 Electromechanical Energy Conversion*

Introduction to mechatronics with emphasis on industrial robots used automated manufacturing. design, control, and use of the robot's manipulators.

EE 4501 **Power System Analysis** **3 Credits**
Prerequisite: *EE 3402 Electrical Machines*

Transmission and distribution networks calculation; load flow; load flow control; symmetrical short circuit analysis; unsymmetrical short circuit analysis; power system stability; economic operation.

EE 4503 **Electrical Systems Design** **3 Credits**
Prerequisite: *EE 2401 Electromechanical Energy Conversion*

Basic design concepts, power distribution schemes, codes and standards for electrical installation, safety measures, electrical drawing, load estimation, wiring design, grounding, short-circuit calculation, coordination of protective devices, power factor improvement, emergency power systems.

EE 4504 **Illumination Engineering** **3 Credits**
Prerequisite: *EE 2201 Electric Circuits*

Physical radiant and photometric quantities, measurements of light, radiation from incandescent sources, gascouses conduction and phosphorescence, lamps and lighting fitting, light properties of construction materials, interior and exterior lighting calculations.

EE 4505 **Power System Protection** **3 Credits**
Prerequisite: *EE 4501 Power System Analysis*

Fundamental of protection practices, instrument transformer and transducers, protection devices and protection systems, overcurrent and earth fault protection; differential protection, transmission line protection by distance relaying, transmission line protection by pilot relaying, motor protection, transformer protection, generator protection; bus zone protection.

EE 4506 **High Voltage Engineering** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*

Uses of high voltage and over voltage in power systems; generation of high voltage for testing; high voltage measurement techniques; electric field stress and insulation techniques, breakdown of gas; liquid and solid dielectric; high voltage testing techniques; insulation coordination.

EE 4507 **Power Plant Engineering** **3 Credits**
Prerequisite: *EE 3402 Electrical Machines*

Electrical energy demand-prediction of load-load duration curve-load factor diversity factor. Conventional sources of energy generation: thermal power station- steam turbines and turbo generators-excitation control, auxiliaries and instrumentation; hydropower plants-types of hydraulic turbines and salient pole hydro generators and controls. Principles of operation of nuclear power plants-precautions, gas turbine power plants-captive power plants using diesel engines. Parallel operation and load sharing. Power station switch yard equipment- step up transformers, reactors, CBs, protection. Economic operation and method of loading. Non conventional energy sources and power generation: solar, wind, geothermal and MHD and future trends.

EE 4508 **Power Plant and Substations** **3 Credits**
Prerequisite: *EE 3402 Electrical Machines*

Load curve, diesel power plant, steam power plant; gas turbine power plant, combined cycle power plant, hydro power plant, nuclear power plant, renewable energy sources, type of substation, substation equipment, substation layout, lightning protection, grounding system.

EE 4600 **IC Technology** **3 Credits**
Prerequisite: *EE 2603 Electronics Circuits Analysis*

Crystal growth and sample preparation, magnetic cleaning, epitaxial processes, oxidation, diffusion, ion implantation, CVD, metallization, sputtering, lithography, etching, assembly, packaging, IC devices and components such as resistance, capacitors, diode etc., MOSIC, bipolar transistor IC.

EE 4601 **Industrial Electronics** **3 Credits**
Prerequisite: *EE 3601 Electronic Circuit Design*

Solid-state devices in industry; sensors, light detector, time etc. and their applications, multiphase solid-state rectifier, voltage control, magnetic amplifier, integrated circuits, digital circuits, sequential control, digital control.

EE 4602 **Industrial Instrumentation and Control** **3 Credits**
Prerequisite: *EE 3404 Feedback Control Systems*
or *EE 3406 Control Systems*

Analog and digital equipment and measuring instruments, various types of transducers, data processing and displays, techniques of system control in industry in order to be able to do some analysis, design, equipment selection and maintenance for the control system in industry.

EE 4603 **Industrial Electronics** **3 Credits**
Prerequisite: *EE 3601 Electronic Circuit Design*
or *EE 2605 Engineering Electronics*

Solid-state devices in industry; sensors, light detector, time etc. and their applications, multiphase solid-state rectifier, voltage control, magnetic amplifier, integrated circuits, digital circuits, sequential control, digital control.

EE 4701 **Microprocessor Interface Techniques** **3 Credits**
Prerequisite: *EE 3703 Microprocessor*

Revision of 8-bit, 12-bit, 16-bit microprocessors, hardware, using programming in instruction sets. Emphasis will be placed on techniques of interfacing microprocessor to computer systems: (ISA, Serial communication port, Parallel communication port, PCI, SCSI, IDE, A/D & D/A converters). Project work piece and report are required to complete the course requirements.

EE 4705 **Power Electronics** **3 Credits**
Prerequisite: *EE 2603 Electronic Circuit Analysis*
or *EE 2605 Engineering Electronics*
and *EE 3402 Electrical Machines*

Characteristics of power electronics devices, power diode, thyristors, power bipolar; MOSFET, IGBT, characteristics of magnetic material, power transformer core, ferrite core, iron powder core, converters, ac to dc converter, dc to dc converter, ac to ac converter, dc to ac converter.

EE 4706 **Power Electronics Laboratory** **1 Credit**
Prerequisite or Co-requisite: *EE 4705 Power Electronics*

Experiments to be done according to EE 4705 Power Electronics

EE 4901 **Electrical and Electronic Engineering Project I** **1 Credit**
Prerequisite: *Completion of 100 Credits*

Study and development of project in electrical and electronics engineering. Students must submit a report at the end of the semester.

EE 4902 **Electrical and Electronic Engineering Project II** **2 Credits**
Prerequisite: *EE 4901 Electrical and Electronic Engineering Project I*

Continuation of project done in electrical and electronic engineering Project I. Report is also required at the end of the semester.

EE 4903 **Advanced Topics in Electrical and/or Electronic Engineering** **3 Credits**
Prerequisite: *Completion of 90 Credits with the consent of the Chairperson*

Topics of current interest and new developments on Electrical and/or Electronics Engineering.

EE 4904 **Special Problems in Electrical and/or Electronic Engineering** **3 Credits**
Prerequisite: *Completion of 90 Credits with the consents of the Chairperson*

Investigation of special problems assigned by the instructor with the consent of the Faculty: a written report is required.

EN 2230 **Listening and Speaking** **3 Credits**
Prerequisite: *BG 2000 English III*

Advanced English skills in listening and speaking within the contexts of daily usage, academic and business.

EN 3210 **Business Communication in English I** **3 Credits**
Prerequisite: *BG 2000 English III*

English for business communication in various forms, technical terms, appropriate formats to ensure clear and efficient communication.

EN 3211 **Business Communication in English II** **3 Credits**
Prerequisite: *EN 3210 Business Communication in English I*

Overview of organizational communication, both internal and external, its scope and importance in business, writing for effective business communication using various forms of media, significance and basic principles of Corporate Social Responsibility (CSR)

EN 3232 **English Pronunciation I** **3 Credits**
Prerequisite: *BG 2000 English III*

Correct American English pronunciation with emphasis on individual sounds, sounds in words, phrases, and sentences for speech intelligibility in academic, social and professional settings

EN 3233 **English Pronunciation II** **3 Credits**
Prerequisite: *BG 2000 English III*

Correct American English pronunciation with emphasis on practicing stress, rhythm and intonation, practice for speech intelligibility in academic, social and professional settings

EN 3240 **Reading in Business English** **3 Credits**
Prerequisite: *BG 2000 English III*

Comprehension capacity and speed in reading on current issues related to business, interpretation of the structure and objectives of various texts outlines and short synopses of selected material as well as discussions on assigned topics

EN 3270 **Translation: English-Thai** **3 Credits**
Prerequisite: *BG 2000 English III*

Purposes, methods and techniques of translation from English into Thai, development of skills in analyzing sentence patterns of the English language, the use of words, idioms and structure for accuracy in meaning and style of original document

EN 3271 **Translation: Thai-English** **3 Credits**
Prerequisite: *BG 2001 English IV*

Purposes, methods and techniques of translation from Thai into English, development of skills in analyzing sentence patterns of the Thai language, the use of words, idioms and structure for accuracy in meaning and style of original document

EN 3281 **English for Tourism** **3 Credits**
Prerequisite: *BG 2000 English III*

Practice in English for correct and efficient communication in all aspects of travel and tourism

EN 3282 **English for Hotels** **3 Credits**
Prerequisite: *BG 2000 English III*

Practice in English as used in hotel administration, reception, services and business contacts

EN 3283 **English for International Trade** **3 Credits**
Prerequisite: *BG 2000 English III*

English communicative skills and general concepts of import/export and international business

EN 3284 **English for Property Development** **3 Credits**
Prerequisite: *BG 2000 English III*

English skills and special terminology used in property development and property business management, theoretical and practical study of property development

EN 3287 **English for Office Management** **3 Credits**
Prerequisite: *BG 2000 English III*

English skills and proficiency for office management, practice in office work arrangement, meeting organization and minutes taking, appropriate work etiquette and professionalism

EN 3288 **English for Airline Business** **3 Credits**
Prerequisite: *BG 2000 English III*

English communicative skills used in airline business, basic knowledge of the aviation industry and airline works, and specific terminology for airline business

EN 3289 **English for Music Business** **3 Credits**
Prerequisite: *BG 2000 English III*

English communicative skills, terminology, and printed materials used in the music industry

EN 4232 **Business Conversation** **3 Credits**
Prerequisite: *EN 3210 Business Communication in English I*

Practice in conversation on topics related to business, development of efficiency in the oral application of the language in business settings, effective problem-solving in small groups.

EN 4233 **Public Speaking in English** **3 Credits**
Prerequisite: *BG 2001 English IV*

Effective English speaking skills in public, methods and practice for better informative and persuasive speaking, speech organization and visual aids.

EN 4240 **Reading in English Newspapers** **3 Credits**
Prerequisite: *BG 2001 English IV*

Analysis of various forms of journalism: headline news, columns, editorials, news features and interesting topics, development of the Press and the impact of journalism on society

EN 4241 **Critical and Analytical Reading** **3 Credits**
Prerequisite: *BG 2001 English IV*

Development of critical and analytical reading skills, identification of various types of rhetorical strategies, analysis of global current socio-economic and humanitarian issues

EN 4250 **Understanding, Note-taking and Summarizing** **3 Credits**
Prerequisite: *BG 2001 English IV*

Advanced skills in understanding, note-taking, outlining and summarizing both in written and spoken texts related to business, and practice in the organizing and drafting of detailed business reports

EN 4252 **Article Writing** **3 Credits**
Prerequisite: *BG 2001 English IV*

Theories and practice of article and essay writing for various media

EN 4253 **Introduction to Public Relations Writing** **3 Credits**
Prerequisite: *BG 2001 English IV*

Introduction to public relations writing, use of research and language techniques to create good relationships with customers, employees, stakeholders, government and general public

EN 4254 **Academic Writing** **3 Credits**
Prerequisite: *BG 2001 English IV*

Advanced writing skills for communication within academic and business contexts in an internationally accepted documented format

EN 4256 **Introduction to Business Research Writing** **3 Credits**
Prerequisite: *EN 3210 Business Communication in English I*

Methodology and tools in business research, practice in writing for clarity and efficiency with correct terminology, and summaries in business research documents

EN 4262 **Reading of Modern Viewpoints** **3 Credits**
Prerequisite: *BG 2001 English IV*

Reading and discussions of texts representing recent thoughts and views on the human civilization, theories on civilization's present and future development, analysis of written documents published for the purpose of international exchange of views in a variety of fields

EN 4266 **Reading Thai Literary Works in English** **3 Credits**
Prerequisite: *By consent of the instructor*

Recent literary works and other texts written in English, or translated into English by Thai authors, understanding of Thai culture and the political, social and religious concepts embedded in the writings and practice in analytical critique

EN 4267 **Aspects of American Culture** **3 Credits**
Prerequisite: *By consent of the instructor*

In-depth interdisciplinary approach to various features of American values and their impact on aspects of American life

EN 4272 **Translation in Business English** **3 Credits**
Prerequisite: *BG 2001 English IV*
or *EN 3270 Translation: English-Thai*
or *EN 3271 Translation: Thai-English*

Translation of business contents in printed materials and media from English into Thai and Thai into English

EN 4291 **Seminar in Business English** **3 Credits**
Prerequisite: *By consent of the instructor*

Seminar on selected topics related to business or business English, case study in a form of workshop and/or panel discussion for efficient communicative and leadership skills

FIN 2700 **Money, Banking and Financial Markets** **3 Credits**
Prerequisite: *BG 1200 Mathematics for Business*

Principles of money, financial system, financial intermediaries, financial markets, interest rate determination, money supply and the impacts of monetary and fiscal policies on money supply, financial statements analysis, pricing of debt instruments, time value of money, foreign exchange system, banking products and services, application of principles of finance on the money management including financial planning, personal investment, budgeting, tax planning, credit management, insurance protection, and retirement planning.

FIN 3701 **Corporate Finance** **3 Credits**
Prerequisite: *FIN 2700 Money, Banking and Financial Markets*
or *ECO 3713 Economics of Money and Banking*

Introduction to corporate financial management and comprehensive overview from managerial perspectives, theories related to the corporate investment, financing options and decision making, time value of money, securities valuation, analysis of financial statement, cash flow and leverage, working capital management, cost of capital, capital structure, and capital budgeting for corporation.

FIN 3711 **Investment** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Fundamental knowledge of investment: definitions, theories, implementations, and decision making in the financial markets including philosophical basis of investment principles, risk and expected return relationship, company and securities analysis, valuation frameworks and methodologies, portfolio management theory, portfolio management and analysis, capital market theory, capital market efficiency, fixed income valuation, and introduction to derivative securities.

FIN 3712 **Money and Capital Markets** **3 Credits**
Prerequisite: *FIN 2700 Money, Banking and Financial Markets*
or *ECO 3713 Economics of Money and Banking*

A comprehensive study of concepts, theories and application of financial system including financial markets, financial institutions, financial risks, financial assets, covering topics such as interest rate, asset pricing, flow of funds, term structure of interest, duration, loanable fund theory, money and capital markets with respect to structural characteristics, operations, roles, regulations, management, instruments, and market participants, a discussion of government, Central Bank and regulators, and financial institutions such as pension funds, mutual funds and insurance companies with respect to their operations, products/services, challenges and trends.

FIN 3713 **Business Analysis and Valuation** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Financial statements as a framework for business analysis by applying integrating the concepts of accounting, economics and business perspectives to examine the companies' performance, value the companies, and evaluate the potential investment opportunity in order to make sound business decisions.

FIN 3714 **Business Condition Analysis** **3 Credits**
Prerequisite: *BG 2400 Macroeconomics*

Understanding of the working of macro-economy that crucially affects business activities such as production, consumption and investment by using tools of macroeconomic theory and applying them to an analysis of the change in economic environment that caused by economic growth, business cycle, unemployment, inflation, aggregate demand and aggregate supply, national income, money supply, interest rate, international trade and exchange rate in order to understand the impact of government's and the Central Bank's policies on industry, financial market economy and business environment.

FIN 3715 **Personal Finance** **3 Credits**
Prerequisite: *FIN 2700 Money, Banking and Financial Markets*
or *ECO 3713 Economics of Money and Banking*

Conceptual framework for making personal financial planning, management and decision, available techniques and tools, importance of personal finance, personal income, spending and budgeting, money management, wealth management, debt management, risk management, credit management, taxes implications, basic investment techniques, investment planning and strategies (saving, credit and debt instruments, life and property insurance, mutual funds, retirement, housing and automobile decision, consumer credits, etc.), consumer financial responsibilities, and current issues in personal finance.

FIN 3716 **Export-Import Procedure and Financing** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Institutional arrangements, methods, and techniques used to finance international trade with special emphasis on export-import financing within Thailand, government's and financial institutions' rules, regulations and services, financial markets for export-import financing instruments, risk-return aspects of international trades, insurance needs, use of letters of credits, international factoring, accounts receivable insurance, other financing techniques, required export-import documentation, export-import rules and regulations and pertinent customs procedures and practices.

FIN 3723 **Central Banking System and Policy** **3 Credits**
Prerequisite: *FIN 2700 Money, Banking and Financial Markets*
or *ECO 3713 Economics of Money and Banking*

Basic principles and practical implementation of the Central banking, functioning of the financial markets in an attempt to better understand the monetary policy transmission and how the Central bank's operations affect financial institutions and economic system of the country, causes and management of banking crises with emphasis on policies designed to prevent them, such as capital adequacy regulations, deposit insurance, and lender of last resort function of the Central banks.

FIN 3724 **Financial Feasibility Planning** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Theories with practice to assess structure, procedures and data of an investment project in order to evaluate its feasibility, investment opportunities, relationship between financial feasibility and other related factors: economic feasibility, marketing situations, and legal framework in making investment decision.

FIN 3725 **Managerial Economics** **3 Credits**
Prerequisites: *BG 2400 Macroeconomics*
BG 2401 Microeconomics

Application of economic theories, methodologies and analysis to develop essential tools for making optimal decision, demand-supply analysis and estimation, production and cost analysis under different market structures, forecasting, competitive analysis, game theory, and decision making under uncertainty.

FIN 3726 **Financial Statement Analysis** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Principles, concepts, analytical process and techniques employed in interpretation and analysis of financial statements in assessing a firm's performance, prospects and value in order to make business decision, comprehensive analysis of financing activities, investing activities, operating activities, cash flows, return on invested capital, profitability, prospective financial statements, and credit.

FIN 3727 **Real Estate Investment Analysis and Valuation** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Real estate valuation, real estate investment, portfolio management, legal aspects of real estate, discounted cash flow, common real estate valuation models, appraisal of real estate development projects, choices of discount rate, risk and return, analysis of risk-return characteristics of commercial real estate, construction of real estate portfolios, diversification in real estate, efficiency of real estate market and its inflation hedging characteristics, real estate portfolio strategies, and performance measurement.

FIN 3728 **Fixed Income Securities** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Fixed income instruments and fixed income markets such as technical terms used in the industry, properties of different types of fixed income securities, assessment of value of instruments, techniques used to analyze the market, assessment and control of risk, methods to evaluate direction of changes in interest rates and impact of changes in interest rates on pricing, hedging of forwards, futures and swaps, asset-backed securities, and other fixed income derivatives leading to construction of fixed income investment strategies to achieve expected return on investment.

FIN 3733 **Institutional Banking for Emerging Markets** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Characteristics and functions of institutional banking in emerging markets including financial system, products, market factors, legal issues, and risk management of institutional banking, crisis, culture risk and country risk of emerging countries, micro finance, commodity finance, problems encountered in the emerging markets and solutions to the problems, current issues regarding institutional banking in emerging markets, and global banking cases applied to facilitate the understanding of new practices and techniques.

FIN 3734 **Financial Mathematics** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Basic calculus for applications in finance and economics, brief review of polynomials, trigonometric, exponential, and logarithmic functions, discussion of derivatives, integration and differential equations as well as applications to real-world problem areas such as marginal analysis, growth and decay, asset-pricing models, and optimization.

FIN 4721 **Laws and Practices in Finance** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Legal guide to the application of Thai laws, rules, and regulations to finance industry, focusing on financial institutions laws regulated by the Bank of Thailand (BOT) such as capital requirement, liquidity requirement, and deposit guarantee scheme as well as capital market laws regulated by the Securities and Exchange Commission (SEC) such as issuance of securities, public offering of securities, takeover, to starting a securities businesses and derivatives businesses in Thailand.

FIN 4811 **Risk Management** **3 Credits**
Prerequisite: *FIN 3711 Investment*

Financial and non-financial risks framework including concepts, process and practical application containing analytical techniques in identifying, quantifying, assessing, controlling risk and making risk management decision; financial risks including credit risk, market risk and liquidity risk, regarding equity, bond, interest rate, currency, and derivative instruments as well as non-financial risks such as business risk, operational risk, policy risk, legal risk, and reputational risk.

FIN 4812 **International Finance** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance and Senior standing (106 credits)*

International finance and financial environment focusing on the managerial aspects of international financial management from the MNCs' perspectives, international financial markets, foreign exchange markets, exchange rate determinations, policies and strategies adopted by MNCs in assessing, planning and managing their foreign exchange rate risk exposures, and international financing, and capital structure decision.

FIN 4813 **Financial Management** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance and Senior standing (100 credits)*

Advanced financial management with emphasis on practical application and case-study approach to strategically evaluate the performance of corporations and create value for shareholders, financial planning and forecasting, cash budgeting, capital structure, capital budgeting, cost of capital, firm valuation, dividend policies, working capital management, and corporate risk management.

FIN 4815 **Bank Management** **3 Credits**
Prerequisite: *FIN 3713 Business Analysis and Valuation*

Management and regulations of commercial banks, essential elements in the process of commercial bank management; assets, liabilities and capital management, liquidity management, credit management, risk management, international banking regulatory standards, organization and structure of the commercial banking industry, impact of bank regulatory changes, and current issues on the banking industry.

FIN 4817 **Portfolio Management and Security Analysis** **3 Credits**
Prerequisite: *FIN 3711 Investment*

Portfolio management, theories and models in terms of security analysis, portfolio construction, performance and monitoring, simplified portfolio selection process, optimum portfolio and selection process, investment timing, focusing on analytical techniques through economic, industry and business analysis.

FIN 4818 **Seminar in Investment** **3 Credits**
Prerequisite: *Senior standing (121 credits)*

Contemporary investment instruments regarding equity investment, fixed income instruments, mutual fund and derivatives investment, theories or definition to acknowledge various types of investment products and their importance in the financial markets by applying case studies. Student will attend seminars organized by Stock Exchange of Thailand: SET and Thailand Securities Institute: TSI as well as share experience with distinguish guest lecturers (executive level) from various fields of business and research.

FIN 4819 **Contemporary Issues in Finance** **3 Credits**
Prerequisite: *Department approval and Senior standing (121 credits)*

Contemporary issues in finance and applying theories into real world practices regarding corporate governance, venture capital, merger and acquisition, financial law, business sustainability, investment banking, simulation, wealth management, financial planning, microfinance, and Islamic bank.

FIN 4821 **Behavioral Finance** **3 Credits**
Prerequisites: *FIN 3701 Corporate Finance and*
MGT 2404 Managerial Psychology

How individuals and firms make financial decisions and how these decisions might deviate from those predicted by traditional financial or economics theories, existence of psychological biases in financial decision-making, examination of the impacts of these biases on the financial markets and other financial settings, investigation of how insights of behavioral finance complement traditional finance paradigm, limited arbitrage, style investing, stock valuation, portfolio construction, asset allocation, and risk management.

FIN 4822 **Individual Research** **3 Credits**
Prerequisite: *Department approval and Senior standing (Finance and Banking Major)*

Individual research by applying theoretical financial concepts and theories to real world problems of an organization in a selected industry in Thailand, with a specific area of concentration selected by students upon the agreement of a supervisor assigned by the Finance and Banking Department and a submission of a typewritten report and analysis at the end of the semester.

FIN 4832 **Entrepreneurial Finance** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Venture capital, financing new or small and medium sized enterprises including techniques for forecasting and planning the firm's investment needs, identifying and valuing business opportunities, sources of capital and characteristics, credits and banking relationship, working capital management, assets investment, risk management, business planning, structuring deals, and managing through multiple stages of financing.

FIN 4833 **Wealth Management** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Wealth management by using practical portfolio construction and management, life cycle wealth management, purpose and structure of financial services industry and economic factors that affect investment returns, basis relationship between adviser and client and codes of conduct governing business dealings, process of giving financial advice, importance of regular reviews of a client's circumstances, asset allocation and management, financial assets and markets, investment funds and planning, valuation and risk management, retirement and protection planning, real estate, alternative investment products and tax planning.

FIN 4911 **Quantitative Analysis for Financial Decision** **3 Credits**
Prerequisite: *FIN 3711 Investment*

Modern quantitative methods including statistical and financial techniques and mathematical models including the concept of financial econometric for analyzing financial data supporting financial decision-making, and testing the models of how financial markets operate and address the relationship among various existing factors that can lead to empirical facts in order to support financial decision-making.

FIN 4921 **Corporate Strategy and Financial Policies** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance and Senior standing (121 Credits)*

Corporate strategy, financial policies and theoretical framework used in making corporate decision focusing on current issues in finance including capital structure, mergers and acquisitions, corporate takeovers, financial strategy, valuation, restructuring, leveraged buyouts, tax implications, and other topics related to corporate policy by applying case study and current business situations.

FIN 4922 **Derivatives Securities** **3 Credits**
Prerequisite: *FIN 3711 Investment*

Types of derivative securities, mechanics of their markets, their application for hedging and/or speculation, and their valuation, basic modeling techniques for stock prices and other underlying assets which can be used for valuation of plain derivatives such as forwards, futures, options, and swaps in an arbitrage-less market, practical issues of derivatives trading, valuation, and risk management, and specialized derivatives like exotic options, credit, weather, energy, and other derivatives.

FIN 4923 **Advanced Valuation** **3 Credits**
Prerequisite: *FIN 3713 Business Analysis and Valuation*

Advanced valuation and practical manner by advanced valuation technologies to approximate the market estimate of a firm's assets and equity, complex comparative valuation measurement, theories and applications for appropriate models to support the valuation analysis, sources of return decomposition, real options valuation theories and practices, intangible assets and small firm valuation, taxation, mergers and acquisitions issues valuation, comparative valuation, and private equity.

FIN 4924 **Advanced Financial Management** **3 Credits**
Prerequisite: *FIN 4813 Financial management*

Advanced financial management, role and responsibility towards stakeholders, capital structure and dividend policy of the firm, advanced financial analysis and planning, advanced investment valuation and decisions making for firm, mergers and acquisitions, corporate reconstruction and reorganization, evaluation of alternative advanced international finance, advanced risk management techniques, and identification and assessment of potential impact of emerging issues regarding finance and financial management.

FIN 4925 **Introduction to Modeling** **3 Credits**
Prerequisite: *FIN 4814 Quantitative Methods for Financial Decision*

Financial modeling applicable to business solutions, development and implementation of financial models in making financial decision, use of appropriated software (Spreadsheet - Microsoft Excel and R) in handling complicate *financial modeling and large data to simulate and analyze stock price and return, portfolio optimization, fitting and forecasting technique with time series data, and MCMC method for finance.*

FR 0500 **French for Beginners I** **3 Credits**

Basics of the French language in listening, speaking, reading, and writing in an interactive and communicative way and day-to-day French.

FR 0501 **French for Beginners II** **3 Credits**
Prerequisite: *FR 0500 French for Beginners I*

Intermediate French grammar, practice of listening, speaking reading and writing in simple French in a range of everyday situations.

FR 1500 **Introduction to French** **3 Credits**

Introduction to fundamental grammar, practice of reading and writing short essay and dialogues on various areas, use of oral comprehension and expressions.

FR 1501 **French I** **3 Credits**
Prerequisite: *FR 1500 Introduction to French*

Higher level of grammar, reading basic texts and dialogues concerned with everyday life in French-speaking countries and practice of writing paragraph.

FR 2501 **French II** **3 Credits**
Prerequisite: *FR 1501 French I*

In-depth grammatical structure, reading texts and dialogues concerned with everyday life in French-speaking countries and practice of writing short articles.

FR 2502 **French III** **3 Credits**
Prerequisite: *FR 2501 French II*

Advanced grammar structure, reading texts and dialogues concerned with everyday life in French-speaking countries and practice of writing short articles with complex sentences.

FR 3503 **Introduction to Business French** **3 Credits**
Prerequisite: *FR 2502 French III*

Introduction to business vocabulary, practice of reading and writing business texts.

FR 3510 **Business Communication in French I** **3 Credits**
Prerequisite: *FR 2502 French III*

Review technical terms in business, various types and forms of letters, practice of listening, speaking, reading and writing texts and letters in business context.

FR 3511 **Business Communication in French II** **3 Credits**
Prerequisite: *FR 3510 Business Communication in French I*

Review technical terms in business letters, study advanced French for career purposes, practice of speaking and writing different types of business letters with complex forms and contents.

FR 3520 **Introduction to French Linguistics** **3 Credits**
Prerequisite: *FR 2502 French III*

Nature, structure and use of spoken language, features of French language: phonemics, phonetics and grammar patterns.

FR 3530 **Oral Comprehension and Expression** **3 Credits**
Prerequisite: *FR 2502 French III*

Practice of listening, oral comprehension and discussion, technique of giving opinion and argument on various topics.

FR 3531 **French Conversation and Discussion I** **3 Credits**
Prerequisite: *FR 3530 Oral Comprehension and Expression*

Practice of speaking skills on every-day life and business topics, group and panel discussion pattern.

FR 3534 **French Phonetics** **3 Credits**
Prerequisite: *FR 2502 French III*

Concepts and principles of phonetics, speech articulators, French speech sounds system, symbols of IPA and transcription, articulatory problems.

FR 3535 **Basic Conversation in Business French I** **3 Credits**
Prerequisite: *FR 2501French II*

Practice of listening and speaking skills with emphasis on business topics, formal and informal business conversation.

FR 3536 **Basic Writing in Business French I** **3 Credits**
Prerequisite: *FR 2501 French II*

Practice of writing skills through intensive practical exercises in grammar and vocabulary, writing documents related to business: curriculum vitae., advertisement, signs used in business, such as in hotels, restaurants, airports, companies, etc.

FR 3541 **French Reading and Oral Report** **3 Credits**
Prerequisite: *FR 2502 French III*

Technique of reading, retainability of data and oral report through business articles.

FR 3570 **Translation: French-Thai** **3 Credits**
(or FR3531 French Conversation and Discussion I - for international students)
Prerequisite: *FR 2502 French III*

Translation of sentences, paragraphs and articles from various sources : extracts from articles, newspapers, books, advertisement and websites, selection of proper words, idioms and structures to convey the accurate meanings and style levels of the original documents, discussion on some major problems specific to written and oral (simultaneous) interpreting.

FR 3580 **French for Secretaries** **3 Credits**
Prerequisite: *FR 2502 French III*

Skills and correctness in hearing, speaking, reading and writing of the French language according to secretarial framework, principles and techniques of business communication, practice of composing many types of letters, memos and reports.

FR 3581 **French for Tourism** **3 Credits**
Prerequisite: *FR 2502 French III*

Use of the French language in tourism, a field trip with the professional guide, general knowledge of tourism business and role play in the selected situation.

FR 3582 **French for Hotels** **3 Credits**
Prerequisite: *FR 2502 French III*

Various dialogues of French as used in hotels and restaurants. reception, services and message taking from inside and outside calls, French-Thai foods and beverages, French wine.

FR 4504 **Business French I** **3 Credits**
Prerequisite: *FR 3503 Introduction to Business French*

Development of spoken and written skills in business contexts with advanced vocabulary, in-depth study of business French.

FR 4505 **Business French II** **3 Credits**
Prerequisite: *FR 4504 Business French I*

Review of advanced business French vocabulary with emphasis on fluency of speaking and writing, critical and analytical skills.

FR 4532 **French Conversation and Discussion II** **3 Credits**
Prerequisite: *FR 3531 French Conversation and Discussion I*

Advanced French conversation on various topics for career purposes, organization of ideas and clarity of expression.

FR 4533 **Public Speaking in French** **3 Credits**
Prerequisite: *FR 3531 French Conversation and Discussion I*

Methods and techniques of listening, speaking and deliver speeches, practice of argumentation, non-verbal communication and language behavior, selection and evaluation of materials for speech; organization of information, thought, voice, action, and the optimal speaker-listener relation.

FR 4540 **Reading in Business French** **3 Credits**
Prerequisite: *FR 2502 French III*

Techniques of reading articles in business contexts, interpretation of factors and purposes used in the articles, developing outlines and short synopses of selected material and leading discussions on the assigned topics.

FR 4542 **Reading French Magazines and Newspapers** **3 Credits**
Prerequisite: *FR 3503 Introduction to Business French*

Readings and analyses of various articles, with the study of the vocabulary and the context of the articles on the current interest and business oriented, study of French language press in particular: newspapers, magazines and articles through the internet, and its impact on the French-speaking society and discussion in class by groups or panels.

FR 4572 **Translation in Business French** **3 Credits**
Prerequisite: *FR 3503 Introduction to Business French*

Practice of translation from French into Thai: various types of articles and business data from newspapers, texts, magazines and internet articles, etc.

FR 4573 **Aspects of French-Speaking Countries** **3 Credits**
Prerequisite: *FR 2502 French III*

French speaking countries' life style, thought patterns, mentality, civilization and interdisciplinary studies.

FR 4590 **Seminar** **3 Credits**
Prerequisite: *Consent of Instructor*

Various problems in using Business French. Workshop and panel discussions.

FR 4591 **Selected Topics in French Studies** **3 Credits**
Prerequisite: *FR 2502 French III*

Critical analysis of French language or culture on assigned topics.

FT 3100 **Introduction to Food Technology** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry*

Role of food industry in relation to modern societies, scientific principles and operations involved in the preservation and manufacture of food, food composition, nutrition labeling and marketing of a representative range of commercial foods, current consumer issues such as the safety of food additives, food irradiation, consumer protection, new product development, food regulations and future trends in food supplies.

FT 3102 **Food Engineering** **3 Credits**
Prerequisite: *BT 3013 Introduction to Bio-processing Engineering*

Concepts and principles of engineering for various unit operations in food-industry, including pumps, heat exchangers, evaporators, dryers, refrigerators, boilers, retorts, and size reduction equipment, and corresponding laboratory sessions.

FT 3103 **Food Microbiology** **3 Credits**
Prerequisite: *BS 2011 Introduction to Microbiology*

Microorganisms in food safety and spoilage, their growth parameters, main characteristics of common food-borne pathogens e.g. bacteria, viruses, parasites and fungi, contamination routes and surviving in foods, subsequent diseases and possible means for controlling, a background to practically identify and examine the organisms, and corresponding laboratory sessions.

FT 3104 **Human Nutrition** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry*

Importance of nutrition in daily life, dietary nutrients, chemical composition, food sources, roles and functions in human body, the digestion, absorption, and metabolism of nutrients, diseases associated with nutrient deficiency, and appropriate nutrition for people through the life cycle for example pregnancy and lactation, infancy, childhood, and adolescence, adulthood and the later years.

FT 3105 **Human Nutrition** **3 Credits**
Prerequisite: *BS 2006 Basic Biochemistry*

Importance of nutrition in daily life, dietary nutrients, chemical composition, food source, roles and functions in human body, the digestion, absorption, and metabolism of nutrients, diseases associated with nutrient deficiency, and appropriated nutrition for people through the life cycle for example pregnancy and lactation, infancy, childhood, and adolescence, adulthood and the later years.

FT 3106 **Industrial Food Processing I** **3 Credits**
Prerequisite: *FT 3101 Introduction to Food Technology*

Fundamental knowledge of commercial food processing, thermal processing, low temperature processing, freezing, dehydration, irradiation and chemical preservation, food variables, food quality and raw material preparation, minimal process and waste treatment in food factory, and corresponding laboratory sessions.

FT 3108 **Food Chemistry I** **3 Credits**
Prerequisites: *BS 2004 Analytical Chemistry*
BS 2006 Basic Biochemistry

Basic food components, water, carbohydrate, protein and lipid, their chemistry governing properties and functions in different foods, changes of food components during processing and storing, chemical spoilages and prevention, and corresponding laboratory sessions.

FT 3109 **Food Chemistry II** **3 Credits**
Prerequisite: *FT 3108 Food Chemistry I*

Chemistry of pigments, odor and food additives, factors affecting properties, functions, sources and mechanism in different foods, chemical reaction of enzymes, changes and contamination of toxic substances in foods, theory, selection, analysis techniques of food with scientific instrument, and corresponding laboratory sessions.

FT 4108 **Industrial Food Processing II** **3 Credits**
Prerequisite: *FT 3106 Industrial Food Processing I*

Processing technologies of food products, fruit and vegetable, cereal, meat and poultry, fishery, bakery, confectionery, dairy, appropriated packaging, and factors affecting product qualities during storage and transportation, basic plant layout, advanced food processing, and corresponding laboratory sessions.

FT 4110 **Food Marketing and Management** **3 Credits**
Prerequisite: *BG 2403 Introduction to Economics*

Basic principles of marketing and management of food products, environmental factors in food industry, consumer's buying behavior, food marketing research, product development, pricing strategy, distribution channel, and promotion strategy with examples and case studies of food products.

FT 4112 **Food Quality Control** **3 Credits**
Prerequisites: *BG 1201 Statistics I and*
FT 3106 Industrial Food Processing I

Food production as a systematic and controlling process, acceptance sampling plans for analysis and control of quality, quality management, quality control, quality assurance and quality improvement, quality assurance systems such as Total Quality Management and ISO series within food factory; and corresponding laboratory sessions.

FT 4113 **Food Product Development** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*

New products and new product development process for food industry, how to generate and convert product idea concept into actual product ready for commercialization which include idea screening, product concept development, product formulation and process development, product quality testing, shelf life evaluation, product launching and evaluation, and corresponding laboratory sessions.

FT 4114 **Bakery Technology** **3 Credits**

Science and technology in the production of safe and nutritious bakery products, properties and quality of ingredients, production methods of different bakery products, equipment, quality control, causes of product spoilage, storage methods to maintain good quality of bakery products, plant sanitation, packaging of bakery products, and corresponding laboratory sessions.

FT 4115 **Fruit and Vegetable Technology** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*
or *AI 4208 Processing of Agricultural Products II*

Chemical and physical structure of fruits and vegetables, post harvest changes and handling methods of fresh fruits and vegetables, and commercial processing methods for preservation of fruits and vegetables, advanced technologies in fruit and vegetable processing, and corresponding laboratory sessions.

FT 4116 **Food Toxicology** **3 Credits**
Prerequisites: *FT 3103 Food Microbiology*
FT 3104 Human Nutrition
and *FT 3109 Food Chemistry II*

Chemistry and biochemistry of toxins naturally occurring in food from plants and animals, toxins from microorganism, food additives, and chemical contaminants, routes of entry, metabolism, manifestation of the toxin in body, and corresponding laboratory sessions.

FT 4117 **Dairy Technology** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*
or *AI 4208 Processing of Agricultural Product II*

Milk production and quality in terms of composition, structure, properties and microbiology of milk, principles of commercial practices in processing of milk and dairy products, advanced technology used in dairy industries, and corresponding laboratory sessions.

FT 4120 **Food Additives** **3 Credits**
Prerequisite: *FT 3109 Food Chemistry II*

Types of food additives from nature and synthesis, amino acids, antioxidants, antimicrobial agents, enzymes, polysaccharides, food colors, and food flavor, functional food ingredients, phytochemicals, flavonoids, phenolic compounds, laws and regulations, their significant in commercial food processing, and corresponding laboratory session.

FT 4121 **Meat Poultry and Fishery Technology** **3 Credits**
Prerequisites: *BS 2011 Introduction to Microbiology*
AI 4208 Processing of Agricultural Product II
FT 4108 Industrial Food Processing II

Chemical and physical structure of animal muscles used for human consumption, postmortem changes in muscles and factors affecting the quality of muscle products, pigment development and changes in animal tissue, deterioration and spoilage of animal tissues during processing and storage, and production of different meat, poultry and fishery products, and corresponding laboratory sessions.

FT 4122 **Confectionery Technology** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*

Impact qualities and properties of raw materials used in confectionery products, characteristics and manufacturing processes of various confections, quality control, spoilage, packaging, storage of the confectionery, and corresponding laboratory sessions.

FT 4123 **Food Sanitation** **3 Credits**
Prerequisite: *FT 3103 Food Microbiology*

Principles of cGMPs of food processing, plant layout, receiving raw material, food handling, warehouse controlling, cleaning, pest controlling, water treatment and personnel hygiene, theory and practices on principles of Hazard Analysis of Critical Control Points (HACCP) to produce safe food product; and corresponding laboratory sessions.

FT 4124 **Lipid Technology** **3 Credits**
Prerequisites: *BS 2006 Basic Biochemistry and*
FT 4108 Industrial Food Processing II
or *AI 4208 Processing of Agricultural Product II*

Chemistry and biochemistry of triglycerides and related lipid substances, biosynthesis and degradation of lipids, industrial production of fats and oils including extraction, degumming, and refining, deordorization, crystallization, and hydrogenation, microbial and enzymatic modification of lipids, corresponding laboratory sessions involving with analytical methods and quality control of the edible fat and oil and their products.

FT 4125 **Beverage Technology** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*

Technology for the production of carbonated and non-carbonated, alcoholic and non-alcoholic beverages, the roles of beverages in human life, the manufacturing processes, quality control for production of safe beverages, packaging and beverage packages, and corresponding laboratory sessions.

FT 4126 **Food Packaging** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*
or *AI 4208 Processing of Agricultural Products II*

Chemical, physical and biological properties of packaging material, production techniques and quality control of food packages such as paper, glass, tin plate, plastic films, aluminum foil, laminates and composite materials, criteria in selecting proper package to extend shelf life of different types of food and current trends in development of food package

FT 4127 **Cereal Technology** **3 Credits**
Prerequisite: *FT 4108 Industrial Food Processing II*
or *AI 4208 Processing of Agricultural Product II*

Composition, structure and significance of various kinds of cereals, manufacturing technologies, quality control, storage of cereal and cereal products, and development of new products from cereal, and corresponding laboratory sessions.

FT 4131 **Selected Topic** **3 Credits**

Discussion and advanced study of a selected topic in the field of food technology including corresponding laboratory sessions.

FT 4132 **Color and Flavor Technology** **3 Credits**
Prerequisites: *BS 2004 Analytical Chemistry*
and *BS 2005 Analytical Chemistry Laboratory*

Chemistry of various food colorants, their properties, physiological changes, measurement methods, and affecting factors, flavor chemistry, properties of flavor, development and extraction process of flavor from plants, animals, via food processing; and application of color and flavor in foods, and corresponding laboratory sessions.

FT 4190 **Special Project** **3 Credits**
Prerequisite: *BT 3017 Principles of Research*

A project involving an aspect of food technology, design of study, collection and analysis of experimental data will be done under the faculty member's supervision. A written report and presentation of the research work in a seminar is compulsory.

FT 4191 **Field Trip** **1 Credit**

Visit to food and agro-industrial production facilities to view specific aspects of processing and management. A written report of the tour is required.

FT 4192 **Seminar** **1 Credit**

Method in preparing and performing a scientific presentation, demonstration of scientific research paper presentation from veteran speakers in the field of biotechnology, food technology and agro-industry, and student presentation of a selected paper of interest from scientific journals.

FT 4194 **Internship** **Non-credit**

Practical experience from training in food technology or biotechnology related industry, government sector and/or academic institute of no less than 300 hours to develop skills and confidence after graduation.

GE 1101 **Thai Civilization** **3 Credits**

Foundation and evolution of the Thai race from prehistoric, and historical periods in the Sukhothai, Ayudhaya, Thonburi, and Rattanakosin periods, Thai culture and society during the present period under King Rama IX, and the implementation of the Self-sufficient Economy and other royal projects.

GE 1102 **Introduction to Philosophy** **3 Credits**

Discussions on basic philosophical problem of western and eastern philosophies, such as reality of human existence and essence, human true happiness, value of life, human freedom, and Self and society, including important issues on metaphysics, epistemology, and moral philosophy from Empiricism, Rationalism, Determinism, Existentialism, and Confucianism.

GE 1201 **Information Literacy Skills** **1 Credit**

Definition and importance of information literacy skills, values of information, determination of information need, selection of effective techniques in gathering information, evaluation, syntheses and information utilization.

GE 1202 **General Psychology** **3 Credits**

Various psychological theories and factors, processes and conditions that form one's characters, behaviors, attitudes, and emotions.

GE 1203 **Society, Politics and Economics** **3 Credits**

Culture and relationship between culture and individual, factors in social and cultural changes, social changes, contemporary social problems and social control, political and economic functions, the causes and consequences of World War I,II and Cold War, political and economic changes, globalization and related problems.

GE 1204 **Physical Education** **1 Credit**

Improving physical fitness and psychomotor skills, creating unity among students, and developing the sportive mind.

GE 1301 **Environmental Science** **3 Credits**

General science, scientific approaches, understanding the interrelationships of the nature, identification and analysis of environmental problems, application and alternative solutions for preventing and solving the environmental problems.

GE 1401 **Language and Communication Skills** **3 Credits**
Prerequisite: *(Only for international students)*

Theoretical introduction to the nature of language, communication skills in different situations such as interviews, conferences, presentation, large group, small group, and interpersonal communication, communicative preparation, delivery skills.

GE 1403 **Communication in Thai** **3 Credits**
Prerequisite: *(Only for Thai students)*

Skills in Thai usage, listening, speaking, reading and writing, main ideas finding, information search by state-of-the-art tools, effective public speaking.

GE 1404 **Thai Culture and Traditions** **3 Credits**
(Required GE course for Communication Arts international students)

Cultural and traditional patterns in Thailand, influence of Thai language on culture, role of traditional beliefs and values, festivals and local cultures in different parts of Thailand.

GE 2101 **World Civilization** **3 Credits**

Development of human society, rise and fall of civilizations, achievements and heritages of Western and Eastern civilizations since ancient time in order to understand their roots and their impacts on modern societies.

GE 2103 **Art of Reasoning** **3 Credits**

Fundamental analysis of logical elements and rational applications for daily life emphasizing on deductive and inductive methods of validity and fallacy.

GE 2202 **Ethics** **3 Credits**

Nature of man, society, and the world, self-discovery, self-love, self-respect, self-actualization, relationship between man and man, man and society, and man and the world, possible problems of living together in the society and their analysis, and ways to live a meaningful and happy life.

GL 1101 **Elements of Spoken Language** **3 Credits**
Prerequisite: *BG 1001 English I*

Essential elements of Spoken language; concepts and principles of phonetics; use of International Phonetic Association (IPA) system of phonetic transcription and practice in speech sound production and identification, analysis of problems of pronunciations.

GL 3102 **Introduction to Linguistics** **3 Credits**
Prerequisite: *BG 2000 English III*

Characteristics, functions, concepts and principles of the human language; four major structural components of language and the relationship to one another; language change, language acquisition and the relationship of language and society.

GL 3103 **Language, Culture and Behavior** **3 Credits**
Prerequisite: *GL 3102 Introduction to Linguistics*

Relationships between language, culture and behavior in an international environment; issues related to language, society, culture and behavior; language variations in different contexts, World English, cross-cultural communication, and non-verbal communication.

GS 1004 **Arts of Delineation** **3 Credits**

Elementary concepts and techniques of freehand perspective sketch and rendering, training in perception of materials, form and spaces, various media and techniques of creation of artistic forms in light, shade and shadow, emphasizing upon conceptual development of personal skills.

GS 1005 **Graphic Presentation** **3 Credits**

Essential methods of presentation, emphasizing upon concepts, theories and skills of using various media and techniques, ranging from two- dimensional presentation to three-dimensional modeling for communicating ideas.

GS 1006 **General Calculus** **3 Credits**

Introduction to differential calculus, review of algebra, coordinate geometry and graphing techniques, functions, exponential logarithmic and trigonometric functions, limits, differentiation, and integration.

GS 1007 **General Physics** **3 Credits**

Introduction to structural properties of construction materials, loads and reactions, stress and strain, deformation and elasticity of materials, rigid-body concept and free-body diagram, stability and determinacy, behavior of structure under loads, equilibrium equations, shear, moment and bending moment diagram, forces analysis of structures and mechanics.

GS 1302 **Contemporary Science and Sustainability** **3 Credits**

Contemporary science concepts, scientific invention and innovation, the essential of ecological modernization and biodiversity, relationship of globalization, resources, energy and environmental issues, multidisciplinary in approach and sustainability

GS 2103 **Thai Buddhism** **3 Credits**

General concepts of Buddhism, history of Buddhism in Thailand and influences of Buddhism towards Thai Buddhists' way of life

GS 2104 **Contextual Religions** **3 Credits**

Critical and comparative study on the greatest religions of the world, especially Christianity, Islam, Buddhism, Taoism, and Zen Buddhism

GS 2106 **Logical Thinking and Application** **3 Credits**

Analytical study of complicate logic through symbolization, justification of argumentative validity via contingency of statements, and consistency of premises in Logical Formulae

GS 2205 **Communication and Cultures** **3 Credits**

Communication skills, effective interaction with other people, human relationship in a multicultural society, interpersonal intelligence, skills in learning and living with others

GS 2206 **Personality Development** **3 Credits**

Improvement of one's self-confidence, positive thinking towards oneself, making friends, table manners, dressing in different social settings, keeping healthy, public speaking, and other interpersonal relationship skills

GS 2207 **Sports, Health and Wellness Development** **3 Credits**

Knowledge and understanding of sports, exercise, health promotion and fitness, principles of sport spectator, selection of sport activities, self-care for good health and wellness development

GS 2208 **Thai Politics** **3 Credits**

Thai politics from monarchy to democracy, political reforms, military in ascendancy, development of democracy, involvement of civil and private sectors, election, political corruption

GS 3101 **Applied Philosophy to Contemporary Society** **3 Credits**

Applied philosophy in contemporary ethical topics and problems, the relationship between moral theories and law, religion, freedom, education, business, and communication

GS 3401 **Public Speaking in Thai** **3 Credits**
Prerequisite: *(For international students only)*

Knowledge and Thai basic knowledge skills in communication, basic principles and techniques of effective speaking, practical experience, and development of speakers' personality

HTM 3001 **Sustainable Tourism** **3 Credits**
Prerequisite: *HTM 3102 Introduction to Tourism Management*

Tourism development as well as its impacts to the host country in terms of environmental, socio-cultural and economic perspectives, different approaches for understanding tourism development and its sustainability, definitions and organizations related to sustainable tourism, components, procedures and techniques of sustainable tourism management and planning.

HTM 3002 **Business Operation and Leadership in Hospitality and Tourism** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Leadership, various theories and styles of leadership in the field of hospitality and tourism industries, operation as a major functional area of business and operation decision making to improve by utilizing all the underlying disciplines.

HTM 3003 **Information Technology in Hospitality and Tourism** **3 Credits**
Prerequisites: *BIS 2180 Information Technology*
HTM 3101 Introduction to Hospitality Management
HTM 3102 Introduction to Tourism Management

Latest information technologies in the hospitality and tourism industries, property management systems and central reservation systems, practice of current global distribution system software packages.

HTM 3101 **Introduction to Hospitality Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Fundamentals of hotel management, hotel structure and staff, receptions, public relations, other hotel services encompassing foods and beverage, housekeeping and engineering.

HTM 3102 **Introduction to Tourism Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Aspects of tourism demand and supply-element of tourism, model of consumer behavior and decision-making process, impacts of tourism together with role and importance of tourism planning in minimizing those impacts of tourism and developing strategies to ensure sustainable evolution, and ticketing process.

HTM 3103 **Consumer Behavior in Hospitality and Tourism Industry** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Diversity of tourists and their consumer behavior, traditional, social and cultural backgrounds, sociological and psychological factors, social groups, demographic variables, social strata and culture that form tourist attitudes, consideration, purchasing behavior and consumption, tourist behavior with qualitative and quantitative approaches to assure better understanding of diversity of tourist behavior.

HTM 3204 **Human Resource Management in Hospitality and Tourism** **3 Credits**
Prerequisites: *HTM 3101 Introduction to Hospitality Management*
HTM 3102 Introduction to Tourism Management

Overview of policies, practices, and procedures that can be used to attract, select, develop, and retain quality employees, factors that influence human resource management policies and practices, substantive situations to be faced as a future hospitality and tourism professional

HTM 3205 **Marketing in Hospitality and Tourism** **3 Credits**
Prerequisites: *HTM 3101 Introduction to Hospitality Management*
HTM 3102 Introduction to Tourism Management

Application of knowledge and skills acquired in principles of marketing and consumer behavior to the hospitality and tourism industry, evaluation of the industry, analyzing and developing marketing plans, application of various promotional strategies and tools to achieve organization's marketing objectives, department's structure, functions, and responsibilities of key personnel.

HTM 3211 **Food and Beverage Management** **3 Credits**
Prerequisite: *HTM 3101 Introduction to Hospitality Management*

Role and contribution of the Food & Beverage department, its structure, and functions and responsibilities of the key personnel, overview of the department's functions: purchasing, receiving, storing, food preparation, stewarding, planning the menu, food service and sales, including food sanitation, food quality and kitchen equipment.

HTM 4111 **Food and Beverage Service** **3 Credits**
Prerequisite: *HTM 3211 Food and Beverage Management*

Food and beverage operations, service principles and practices, types of table service of beverage, identification of service and restaurant equipment and supplies, effective employee recruitment and selection as well as strategies for orientation, training and evaluations, principles and application of menu planning, operations of in-house and outside catering, as well as sales and cash control.

HTM 4112 **Kitchen Operation** **3 Credits**
Prerequisite: *HTM 3211 Food and Beverage Management*

Principles and techniques involved in food production, kitchen organization, food and personal hygiene, kitchen equipment and utilities, basic food preparation methods, kitchen stewarding, sanitation food production control and standards, and kitchen terms.

HTM 4210 **Strategic Management in Hospitality and Tourism** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Analytical discussion of key areas of contemporary hospitality and tourism management: evaluation of the most important global trends in tourism, analysis of the impact of crucial environmental issues and their implications and the major factors affecting international tourism.

HTM 4301 **Room Division Management** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Room division, front office operations which covers reception, reservation, room sales, registration, cashier responsibilities and night-auditing, functions and roles of the hotel housekeeping department and coordination with the front office department.

HTM 4302 **Event Management** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Principles of event management, formulation of event tourism strategies such as implementation of festivals, entertainment, corporate, cultural and sports events.

HTM 4303 **Service Management** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

A holistic and interdisciplinary approach which is used to explore the principles of service management, understanding of what actually constitutes quality, nature of service and strategies for improving it.

HTM 4401 **Tourism Policy and Development** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Tourism planning in both public and private sectors at local, regional and national levels including the components of planning process, the role and the importance of the involvement of communities, different impacts of tourism development, tourism policies and strategies for successful development.

HTM 4402 **Tourism Destination Management** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Comprehensive coverage of various tourism destinations, basic principles underlying the development of tourism supply and demand, up–to-date trends and implementation of different management approaches.

HTM 4403 **Tour Guiding and Operation in Practice** **3 Credits**
Prerequisite: *HTM 3205 Marketing in Hospitality and Tourism*

Roles and ethics of a professional tour guide including tour guide practices, tourist safety measures, custom and immigration procedures and Thai tourism law, aspects of tourism distribution channels and characteristics of tour operation.

HTM 4404 **Cultural Heritage Tourism** **3 Credits**
Prerequisite: *HTM 3001 Sustainable Tourism*

Conceptual partnership of cultural heritage and tourism, analysis of a wide range of cultural heritage attractions and heritage visitors' behavior and motivation, contemporary approaches to heritage tourism development and management, heritage marketing, roles of interpretation programs employed in major cultural heritage sites and principles and models of interpretation.

HTM 4405 **International Tourism Studies** **3 Credits**
Prerequisite: *HTM 4210 Strategic Management in Hospitality and Tourism*

International issues governing the tourism industry including industry trends and best practices, roles and functions of international tourism organizations, principles and practices of related laws and regulations of tourism from local, regional and global perspectives.

IBM 2702 **International Business Environment** **3 Credits**
Prerequisite: *BG 2401 Microeconomics*

Global business environment focusing on economics, social-cultural, and political, regulatory and legal dimensions of international business environment, international business theories, global business environment, FDI, trade policies, institutional arrangements, government business relationships, global perspectives, challenges and opportunities in the competitive business environment.

IBM 3642 **International Buyer Behavior** **3 Credits**
Prerequisite: *MGT 2404 Managerial Psychology*
MKT 2280 Principles of Marketing

Methods of how industrial and consumer goods are marketed to international buyers and the strategic process of segmentation, targeting and positioning, international buyer behavior models and decision making schemes, variables in addition to culture that affect international buyers' purchase behaviors, cognitive, affective and co-native responses of industrial and consumer buyers from other countries in various contexts such as in trade shows, advertising effects, promotional incentives, direct marketing and e-commerce.

IBM 3643 **International Marketing Communications** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Global and domestic cultural diversity and their impact on IMC strategy development, values, behaviors, and underlying assumptions related to verbal and visual communication strategies, the debate surrounding standardization versus localization of worldwide marketing communications campaigns, case studies of IMC campaigns directed to culturally specific domestic and international audiences.

IBM 3711 **Comparative Management** **3 Credits**
Prerequisite: *IBM 2702 International Business Environment*

Differences and similarities of managerial systems and management practices in different cultural settings, definitions and concepts of culture, cultural differences at the national, organizational and managerial levels, regional and country cultural characteristics, complexities and challenges of running global organizations.

IBM 3713 **International Management** **3 Credits**
Prerequisite: *IBM 3711 Comparative Management*

Management of assets and operations beyond the borders of one's home country, managers' fundamental responsibilities for planning, organizing, leading and controlling the firm's activities across cultures.

IBM 3714 **Export-Import Policy and Strategy** **3 Credits**
Prerequisite: *MKT 3620 Global Marketing*

Issues involved in developing comprehensive export/import strategies at national sector and firm levels, government institutions and their roles in balancing exports and imports among sectors, strategic use of export-import organizations to promote economic and competitive advantages, procedures and practices of export-import financing, documentation, export/import compliance, export/import channels, foreign trade zones, and transportation modes.

IBM 3722 **Legal and Ethical Issues in International Business** **3 Credits**
Prerequisite: *IBM 2702 International Business Environment*

General legal and ethical aspects involved in international business environment focusing on legal aspects of international trade, international contracts, foreign investments and ethical issues across border

IBM 3723 **International Relations** **3 Credits**
Prerequisite: *IBM 2702 International Business Environment*

Fundamental principles, issues, conflicts and resolutions in international relations, and international organizations such as the United Nation, the World Trade Organization the World Bank that govern international relations and its effect on business

IBM 3841 **International Pricing Strategy** **3 Credits**
Prerequisite: *MKT 3620 Global Marketing*

Strategic and tactical aspects of pricing decisions in international context through both qualitative (consumer behavior and psychology) and quantitative (economics and statistics) analyses, application of pricing theory, factors affecting pricing of goods and services in the global market, the influences of both domestic and international competition on pricing structures, across product lines and customer segments, pricing implications in trade negotiations, export-pricing strategies, transfer pricing issues, and buyer arbitrate affects.

IBM 4811 **International Strategic Management** **3 Credits**
Prerequisite: *IBM 3713 International Management and Completion of 118 credits*

Strategic management amidst the phenomena of globalization to encourage students to integrate and apply knowledge and skills learned in earlier courses, critical business skills of understanding and managing strategic issues in international settings, environmental analysis, challenges and benefits of globalization, design of global corporate strategies, system of value creation, and evaluation of corporate strategies.

IBM 4820 **International Cooperative Strategy** **3 Credits**
Prerequisite: *IBM 3713 International Management*

Systematic conceptual framework of international cooperative strategies and managerial skills and competencies necessary to form and manage effective cross-border partnerships, issues related to various typologies and frameworks for strategic alliances and partner selection, ownership structure decision, design of management control systems, performance assessment, inter-partner fit/trust building, and evolution and stability of alliances over time.

IBM 4840 **Global Supply Chain Management** **3 Credits**
Prerequisite: *IBM 3714 Export-Import Policy and Strategy*

Activities involved in the flow of goods from point of origin to point of consumption on a global scale, differences about supply chain management in the international setting, nature of international problems associated with the procurement, operations management, inventory control, logistics and transportation, distribution, customer service, and Internet-enabled supply chains.

IBM 4841 **International Services Marketing** **3 Credits**
Prerequisite: *MKT 3620 Global Marketing and Completion of 106 credits*

Services marketing in an international context, market orientation, long-term relationship, quality and satisfaction, cases in the marketing of services to help students gain more insight on the issues and problems are arising from services marketing and to practice their problem-solving skills.

IBM 4843 **International Product and Brand Planning** **3 Credits**
Prerequisite: *MKT 3620 Global Marketing and Completion of 106 credits*

Process of developing and introducing new products and brands for different culture markets, product line and brand management such as product standardization versus differentiation, brand extensions and dilutions, multiple product life cycles, international product positioning and branding, and their impacts on building brand image.

IBM 4921 **Individual Research** **3 Credits**
Prerequisite: *MGT3940 Business Research and Completion of 118 credits*

Developing students' ability to apply a theoretical approach to the real world problems of any organization in a selected industry in Thailand, a specific area of concentration will be chosen by students upon approval of advisor from the department of IBM.

IBM 4923 **Seminar in Regional Studies** **3 Credits**
Prerequisite: *Completion of 118 credits*

Regional business environments, management practices and activities of multinational corporations in selected regions, incorporated analytical skills and strategic thinking in managing operations in these regions.

IDM 3200 **Quantitative Analysis** **3 Credits**
Prerequisites: *BG 2200 Statistics II*
MGT 3905 Operations Management

Probability concepts, forecasting, mathematical decision making techniques, normal distribution theory, decision trees, game theory, simplex method, simulation, and linear programming.

IDM 3202 **Motion and Time Study** **3 Credits**
Prerequisites: *BG 2200 Statistics II*
MGT 3905 Operations Management

Operational improvement by identifying process and selecting the appropriate tools for problem solving and decision making, the implementation of new methods which requires the installation and developing job analysis, standard time consisting of time study, predetermined time system or work sampling, measuring performance and motivating workers to work efficiently and safely.

IDM 3203 **Logistics and Supply Chain Management** **3 Credits**
Prerequisites: *MGT 3905 Operations Management*
MKT 2280 Principles of Marketing

Logistics system, logistics collaboration, tools and techniques for logistical analysis, trade-off between cost and service level, logistic functions, customer accommodation strategies, procurement strategies, manufacturing strategies, logistical strategies and operations, order processing, inventory, transportation, warehousing, network design, and logistical performance measurement.

IDM 3204 **Industrial Safety and Risk Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Principles of risk management and its process, methods of handling risks especially loss prevention, how to manage safety procedures and how safety cultures can be built and established among organizational members, how safety can lead to cost reduction, productivity and efficiency improvement for the company as a whole.

IDM 3306 **Warehousing and Material Handling** **3 Credits**
Prerequisite: *IDM 3203 Logistics and Supply Chain Management*

Warehousing operations and systems, warehousing pallet, case, and small items storage and retrieving systems, operations, order profile, functional analysis, layout, resources, and warehousing development system.

IDM 3307 **Transportation and Distribution Management** **3 Credits**
Prerequisite: *IDM 3203 Logistics and Supply Chain Management*

Transportation modes selection and management system, transportation routing analysis and management, micro-analysis of logistics and transportation services, distribution operations, transportation costing, distribution networks management, intermodal transportation and transportation mode interface.

IDM 3308 **Supply Chain Relationship Management** **3 Credits**
Prerequisite: *IDM 3203 Logistics and Supply Chain Management*

Introduction to relationship management for both customers and suppliers aspects, customer relationship management focusing on its application in marketing and sales strategies, data management and customer data development, organization and CRM, supplier relationship management covering the scope, structure of strategic relationships, selecting and evaluating alliance potential, and incorporating supplier alliances into organization, and leading industrial practices on collaborative relationship e.g. Continuous Replenishment Program.

IDM 3402 **Facility Management** **3 Credits**
Prerequisite: *IDM 3203 Logistics and Supply Chain Management*

Layout management, maintenance management, material flow design and control, total productive maintenance, space and work flow allocation and design, layout setup consideration, site selection, basic installments, and rule and regulations.

IDM 3403 **Industrial Engineering Management** **3 Credits**
Prerequisite: *IDM 3200 Quantitative Analysis*

Management of engineering aspects of an operation, concept of re-engineering of process and product, application of time motion study, machinery utilization, development of work structure, work flow, and work calculation from engineering standpoint.

IDM 4201 **Manufacturing Planning and Control** **3 Credits**
Prerequisites: *MGT 3905 Operations Management*
IDM 3200 Quantitative Analysis

Production systems, materials planning and control, production aspects, market demand management, functional linkages, determination of production schedule and dispatching, production control system, implementation, and inventory management.

IDM 4202 **Production Costing and Budgeting** **3 Credits**
Prerequisite: *ACT 2620 Fundamentals of Managerial Accounting*

Cost accounting approaches, job order costing, process cost accounting and activity-based costing (ABC), production cost planning and controlling by budgeting and responsibility accounting, evaluation of manufacturing performance through standard costs and financial statement analysis techniques.

IDM 4203 **Quality Management** **3 Credits**
Prerequisite: *MGT 3905 Operations Management*

Principles and practices of quality management during production process, application of techniques in quality improvement and quality control, modern concept of quality with emphasis on the Malcolm Baldrige criteria for performance excellence and six-sigma which increase efficiency and effectiveness in industrial business.

IDM 4206 **Industrial Environmental Management** **3 Credits**
Prerequisite: *GE 1301 Environmental Science*

Concepts of environmental studies, water system, water supply, wastewater treatment, air quality, meteorology and natural purification process, engineering system for air pollution control, solid waste control and management, and ISO 14000.

IDM 4207 **Internship in Industrial Management (300 Hours)** **3 Credits**
Prerequisite: *Consent of the Department Chairperson*

Internship program with an industrial company for not less than 300 hours of work. Weekly progress reports and approved by the student's immediate supervisor must be submitted. A report submission and final presentation must be given.

IDM 4208 **Project Analysis and Management** **3 Credits**
Prerequisites: *FIN 3701 Corporate Finance*
MGT 3905 Operations Management

Foundation of project management, project life cycle: starting from project selection until project termination, concept and tools of managing project successfully, simulation program and software for project management.

IDM 4301 **Information Technology in Supply Chain** **3 Credits**
Prerequisites: *BIS 2180 Information Technology*
IDM 3203 Logistics and Supply Chain Management
IDM 4201 Manufacturing Planning and Control

Conceptual and practical issues in information systems to aid in decision-making in industry, information technology for resource planning and scheduling: ERP, CRP, APS, RFID, and inventory management, supply chain decision support system in such areas as Demand Planning, Logistics Network Design, Inventory Deployment, Sales & Marketing Region Assignment, DRP, MRP, Production Location Assignment, Fleet Planning, Lead Time Quotation, Production Scheduling, Workforce Scheduling, etc.

IDM 4302 **Industrial Strategic Management** **3 Credits**
Prerequisite: *IDM 4208 Project Analysis and Management*

Definition and different levels of strategies, environmental analysis techniques, analysis of organizational current strategies and resources as well as capabilities, strategy selection model, strategy implementation plan and control.

IDM 4401 **Technology and Innovation Management** **3 Credits**
Prerequisite: *IDM 4203 Quality Management*

Technology introduction process, research and development control and management, technological change and company's manufacturing strategy, product/process/technology life cycle, innovation process generation and implementation.

IDM 4501 **Seminar in Industrial Management** **3 Credits**
Prerequisite: *Senior Standing (Industrial Management Major)*
or *Approval of the Lecturer*

Current industrial conditions, problems, and solutions, class discussion, business exposure, guest speaker, research and presentation.

IE 1110 **Engineering Materials** **3 Credits**

Study of relationship between structures, properties, production processes and applications of main groups of engineering materials i.e. metals, polymers, ceramics and composites, phase equilibrium diagrams and their interpretation, mechanical properties and materials degradation.

IE 4100 **Manufacturing Processes** **3 Credits**
Prerequisite: *IE 1110 Engineering Material*

Theory and concept of manufacturing processes such as casting, forming, machining and welding; material and manufacturing processes relationships; fundamental of manufacturing cost.

IE 4101 **Manufacturing and Information Technology** **3 Credits**
Prerequisite: *Senior Standing*

Basics of CAD/CAM; CAD modeling methods; Computer Aided Manufacturing, solid modeling; materials properties and fundamentals of Automation; Automation technology; Flexible manufacturing systems, knowledge based engineering; robotics technology; machine tools technology.

IE 4201 **Engineering Management** **3 Credits**
Prerequisite: *Completion of 90 Credits with the consent of the Chairperson*

Modern management principles, methods of increasing productivity, human relation, industrial safety, commercial laws, basic of engineering economy, finance, marketing, project management.

IE 4202 **Engineering Economics** **3 Credits**
Prerequisite: *Completion of 90 Credits*

Methods of comparison, depreciation, evaluation of replacement, risk and uncertainty, estimating of income, tax consequences, processes of decision making for investment of challenging projects.

IN 2202 **Interior Architectural Design I** **6 Credits**
Prerequisite: *AR 1104 Fundamental of Architectural Design*

Integration of artistic sensibility, creativity, and the understanding of human factors through basic living spaces. The practice processes an individual concept, analysis of human relations to space, and a practical solution to our contemporary living.

IN 2204 **Interior Architectural Design II** **6 Credits**
Prerequisite: *IN 2202 Interior Architectural Design I*

Practices on small scaled, more complex, multi-users programs, student's hand-drawing and drafting skills, including the production of spatial model for conceptual and professional communication.

IN 2305 **Interior Architectural Design Methods** **3 Credits**

Design activity and its inherited methods, influential design methods to broaden students' perspective of how to design in order to achieve the qualified interior architectural design.

IN 2306 **History of Interior Architecture** **3 Credits**
Prerequisite: *AR 2106 History of Architecture I*

History and the evolution of space planning, interior architecture, decorative details, and furniture design from ancient Egypt through the 19th century in Europe, styles and characteristics of each period as a reference to future developments.

IN 3200 **Theory and Concept in Interior Architecture** **3 Credits**

Significant theories of architecture as well as interior architecture as a discipline, the development over the Western History from the 15th century to the early 20th century, reviewing the ideas, philosophies, concepts and design execution through illustrated lectures and discussion based on analysis of interior architectural space and design.

IN 3203 **Interior Architectural Design III** **6 Credits**
Prerequisite: *IN 2204 Interior Architectural Design II*

Human perception, behavior activity, scale, and the use of materials in small scale commercial space, graphic design media such as signage in relation to interior environment.

IN 3207 **Interior Architectural Design IV** **6 Credits**
Prerequisite: *IN 3203 Interior Architectural Design III*

Complex commercial, business, and hospitality spaces design, human interactions and communication in public space planning, existing building conditions, new trends and details of furniture finishing materials and lighting technology which are incorporated in design.

IN 3301 **Interior Construction Technology I** **3 Credits**

Basic consideration namely: human ecology, which includes anthropometric and ergonomic principles, basic construction methods, materials and finishes and typical details which include skeleton structure of floor, wall, ceiling and staircase wall, ceiling and staircase.

IN 3303 **Interior Construction Technology II** **3 Credits**
Prerequisite: *IN 3301 Interior Construction Technology I*

Advanced construction methods that relate to complex volumes of interior space, which include principles of skeleton structures and modern material and installation techniques, framed structure of regular and raised floors with various aspects of installation of finishing material namely wood, metal, plastic and glass, focusing on interior architecture working drawing following specifications and construction documents.

IN 3304 **Lighting Design** **3 Credits**

Factors that influence lighting design decisions, including properties of materials as they relate to light, codes and law, reading and using catalogs, documentation, and health effects of light, technical and practical aspects of lighting design, including the physics of light, lab technology, the use and design of natural and artificial light throughout history to establish a broad understanding of the culture and historical implications of light, application of photometric data and calculation.

IN 3305 **Furniture Design** **3 Credits**

Specific proponents, movements and conceptual approaches relevant to key furniture designers from the industrial revolution to contemporary period, forms development, design process, aesthetics quality, fashion and trend. Creative projects are assigned to encourage students to emerge in-class knowledge and their creativities to implement an innovative, quality, and practical design.

IN 3306 **Interior Material Application** **3 Credits**

Systematic approach to selecting essential interior design elements, color and materials: types, properties, applications, and practicality as well as awareness of ecological problems, sustainability, and suggestions for future substitution for materials.

IN 4102 **Methods of Research and Data Processing** **3 Credits**

Processes of selecting and preparing materials for research, learning to recognize, collect data and analyze case study, utilizing of fundamental design research to achieve effective design solution.

IN 4203 **Interior Architectural Design V** **6 Credits**
Prerequisite: *IN 3207 Interior Architectural Design IV*

Advanced design focusing on critical observation and experiment to create design concept for large scale commercial and institutional designs, the balance between visionary concept and practical solution, awareness of environmental system and universal design.

IN 4205 **Interior Architectural Design VI** **6 Credits**
Prerequisite: *IN 4203 Interior Architectural Design V*

Commercial and institutional designs, projects which are structured to complex programs with universal users, understanding and concern of the assigned building condition, architectural and social contexts, building codes and regulations. The course provides opportunity for collaborative team working experience.

IN 4304 **Practicum in Interior Architecture (240 Hours)** **Non-credit**

A 240 working hour professional training at an interior architecture firm in order to expose students to all kinds of hand-on experiences and knowledge in the real interior architecture business world.

IN 4305 **Seminar in Interior Architecture** **3 Credits**

Development of interior design from the past to present, academic and practical thinking, obstacles and setbacks relating to the profession and their solutions.

IN 4306 **Furniture Production Methods** **3 Credits**
Prerequisite: *IN 3305 Furniture Design*

Process of making furniture, scale, proportion, basic joinery, materials selection, and assembly techniques. Through lectures, demonstrations and field trips and making of full-scale piece of furniture, students are encouraged to explore diverse interdisciplinary approaches to creative problem solving.

IN 5200 **Pre-Thesis in Interior Architecture** **3 Credits**

Independent study on interior architectural issue and program based on student's individual interest. The student collects the analytical information on the chosen existing building and study context, case study, specific user behavior, and etc. which are beneficial to his/her topic. The student is required to work consistently under the supervision of the assigned advisor throughout the semester.

IN 5203 **Interior Architectural Design VII** **6 Credits**
Prerequisite: *IN 4205 Interior Architectural Design VI*

Student's experience of public large scale design project, managing to initiate and execute complex design program under the time constraint, the design process reinforcing critical and analytical thinking through the search for marketable concept and practical solution. The quality of construction drawings is observed and revised to form student's draftsmanship and realistic vision to professional design.

IN 5205 **Thesis in Interior Architecture** **9 Credits**
Prerequisites: *IN 5200 Pre-Thesis in Interior Architecture*
IN 5203 Interior Architectural Design VII

A student self-initiated design project under the thesis advisor supervision which investigates the specific type of interior space, collecting and analyzing project condition, case studies, user behaviors before design process.

IN 5300 **Professional Ethics and Practices** **3 Credits**

Ethical conduct of the professionals in the field, relationship between client and designer, designer and staff, an understanding fire protection material regulation in building laws, study building law which relate to interior design sections , bidding and contracts, and work supervision.

IN 5400 **Elements of Thai Architecture** **3 Credits**

Different elements of Thai architecture as in building bodies, roofs and structures, analysis of different forms and spaces of Thai traditional architecture, conducting research on Thai design, architectural characteristics, appropriate functions and apply to use in interior design.

IN 5401 **Interior Architecture Cost Estimation and Control** **3 Credits**

Budgeting and cost estimating of a finished interior by making quality survey of materials, estimating labor cost and construction period, practice of cost controlling within a given budget, payment and penalty schedules.

IN 5403 **Advanced Computer - Aided Design** **3 Credits**

Advanced study of computer aided design and the primary introduction to the creation of work with a design and technology context, narrative, computation, and interactivity. Students have to develop their investigations and interests as well as a space for exploration, experimentation, and methodologies.

IN 5404 **Individual Study in Interior Architecture** **3 Credits**

Study and research of individual's interests pertaining to interior architecture under the approval of an advisor.

IN 5411 ***Advanced Lighting*** ***3 Credits***

Advanced theoretical lighting, color and illumination practical functions and aesthetic senses for interior architecture. Practicing lighting design in different scale and perspective which site excursion and seminar are provided.

IN 5413 **Facilities Management** **3 Credits**

Forecasting the feasibility of a project by familiarizing with financial forecasting and budgeting, architectural planning and design, maintenance and operations management, and forecasting risks.

IN 5415 **Fabric Design and Applications** **3 Credits**

Principles of fabric design and applications, technical language associated with qualities of fabric, texture, pattern together with color to apply in interior design.

IN 5416 **Introduction to Exhibition Design** **3 Credits**

Introduction to exhibition design, strategies in designing for exhibitions and trade show booths, various issues ranging from programs, space design, conceptual development of a thematic approach, and creation of a presentation system for products, artifacts, or artwork activities as business practices specific to the trade show and exhibit design industry, and the effective use of computer renderings and presentation skills.

IN 5417 **Arts Appreciation** **3 Credits**

Aesthetic appreciation, diverse branches of arts at differential periods, conceptual idea of imaginative interpretation, imitation of nature and also environment which urges inspiration to influence the artists' philosophical life and his vision, materials and process of creation, including history of arts which can be applied in the subjects of design. Student will gain experiences from out-door study as extra lecture on visiting art gallery and art exhibition.

IND 1101 **Visual Design** **3 Credits**

Visual language, basic design elements, and design composition used in conveying desired messages of 2dimensional designs with emphasis on actual application through a series of corresponding projects.

IND 1102 **Introduction to Design Culture and Trend** **3 Credits**

Contemporary issues in design within the context of creative culture that aims to promote an understanding and appreciation of design works through an investigation of the development, role, and influences of designers on our society.

IND 1301 **Basic Drawing** **3 Credits**

Methods of drawing used in architecture and design profession i.e. orthographic projection, perspective projection, shade and shadow and drawing technique in pencil and ink.

IND 1302 **Design Fundamentals** **3 Credits**

Theory and architectural components and the basic design relationship between forms and function in order to fulfill the perfection of architectural design.

IND 1303 **Computer Applications for Interior Design** **3 Credits**

Computer as a tool in assisting design process, drafting, and presentation through practicing of computer applications such as AUTOCAD, and basic 3 dimensional modeling application

IND 2101 **Design Methods** **3 Credits**

Design activity and its inherited methods through an exploration of influential design methods from the period of Industrial Revolution to present in order to provide a broad perspective of plausible design strategies.

IND 2102 **Human Factors** **3 Credits**

Physical, psychological, and social interaction aspects related to humans especially in capabilities, limitations, and relationships to their surroundings such as anthropometry, sensation and perception, ergonomics, and universal design essential in designing for health, safety and comfort.

IND 2201 **Interior Design I** **6 Credits**
Prerequisite: *IND 1302 Design Fundamentals*

Vital understanding of human-spatial relationship through investigations and analyses of users' need and behaviors and explorations of volumetric interior space via small scale residential projects ranging from a single user to multiple users.

IND 2202 **Interior Design II** **6 Credits**
Prerequisite: *IND 2201 Interior Design I*

Exploration of more complex programming both in functions as well as in users' requirements through projects that involve multiple users and conjoining of different functions, with emphasis on design concept communication via interior design graphic standards through more rigorous project drawing requirements.

IND 2301 **History of Interior Design** **3 Credits**

Interior design history through chronological exploration of the evolution of space planning, interior design, decorative details, and furniture design from ancient Egypt to the 19th century in Europe with emphasis on styles and characteristics of each period as a reference to future developments.

IND 2302 **Building Construction** **3 Credits**

Basic knowledge on components of small building, standard timber construction-skeleton structure with short span beams, columns, floor, staircase and its material such as timber, masonry, concrete through studio works.

IND 2303 **Furniture Production and Fabrication Technology** **3 Credits**

Basic knowledge of furniture design and furniture production including, history and their implement culture, furniture component, ergonomics, design trend, conceptual and aesthetic approaches, and form development process, occupation of existing tool and technique to produce innovative and practical furniture design, exploration of fabrication technology through lecture including, system, structure, and material selections in modular furniture, prefabricated furniture, portable partition, prefabricated low raised floor.

IND 3101 **Theory and Concept in Design** **3 Credits**

Significant design theories and concepts that have led to effective designs in order to provide an understanding in concept derivation as well as insights for critical analysis of current design trends and trend forecasting.
The theories include: Design Semiotics, Phenomenology, Design Hermeneutics, Functionalism, Rationalism, Environmentalism, and Critical Theory.

IND 3102 **Design Research and Development** **3 Credits**

Essential knowledge in how to conduct design-based research that yields balancing results in interior design innovation, ease of manufacturing, and profitability through understanding of the liaison between business market research and interior design research.

IND 3201 **Interior Design III** **6 Credits**
Prerequisite: *IND 2202 Interior Design II*

Exploration of commercial interior design and its intrinsic components including activities, human perception, human behavior in public realms, materials and fabrications in public spaces, environmental graphic design, as well as rules and regulations in public spaces through small-scale commercial interior design projects.

IND 3202 **Interior Design IV** **6 Credits**
Prerequisite: *IND 3201 Interior Design III*

Exploration of more complex commercial and hospitality interior design, which includes established and emerging theories and design principles, material fabrications and lighting technology, interior design codes, and constraints and conditions of involved building.

IND 3301 **Interior Construction** **3 Credits**

Basic interior construction through construction methods, typical interior finishes, details and material uses based on consideration of human ecology, anthropometric and ergonomic principles.

IND 3302 **Interior Material and Technology** **3 Credits**

Systematic approach in variety of material selections and factors including interior design elements, colors, material and applications, ecological material, and new innovative material. Experiment in the alternated creative possibility in composing variety of color schemes, material presentation board.

IND 3303 **Building System Study** **3 Credits**

Basic factors about building systems which interior designers need to understand and co-operate the project sufficiency with the other parties in the design team, information of each different type of small building which is related to interior design process such as; structure system, mechanical system, electrical system, sanitary system, air conditioning system, security system, audio visual system, and etc.

IND 3304 **Interior Design Proposal and Marketing** **3 Credits**

Fundamental knowledge of making the proposal for interior design project both residential and public project including, preparation of documents, written format, categories and contents, evaluation and analysis of market demand, scope of design works, scope of design services, estimated budget, work schedule forecast, necessary preliminary design, fee calculation and cash flow, design contract, and effective communication and presentation skills.

IND 3305 **Practicum in Interior Design** **2 Credits**

A 240 working hours in professional training at interior design firm to expose students to all kinds of professional experiences in the real sector of interior design business.

IND 3306 **Lighting Design** **3 Credits**

Lighting design, history and its implement culture, lighting components, aesthetic sense, health effects of light, physics of light, lab technology, codes and law, reading and using light catalogs, practical aspects of lighting design, lighting application and concern throughout various kinds of experimental project.

IND 4201 **Interior Design V** **6 Credits**
Prerequisite: *IND 3202 Interior Design IV*

Advanced study in interior design, which includes critical analyses of design environment, universal design, and environmental site considerations in order to initiate corresponding design programming and design execution through large scale commercial and institutional projects. This course also provides an opportunity for trans-disciplinary collaborative work focusing on increasing project feasibility.

IND 4202 **Senior Project** **6 Credits**
Prerequisite: *IND 4201 Interior Design V*

Individual study of well-contemplated design project through analyses of design environment, which include emerging design trends, social-cultural context, and environmental concerns resulting in a viable business plan and design schematics for a complex prototype interior design project of appropriate function, aesthetic, scale.

IND 4301 **Design Management** **3 Credits**

Project management skills and the process of organizing and controlling the interior design project, interior design project phase, time frame, cost, procurement, and risk awareness in order to meet client's needs and project time frame.

IND 4302 **Individual Study in Interior Design** **3 Credits**

Individual study and research on the topic of interest pertaining to interior design.

IND 4303 **Professional Ethics and Practice** **3 Credits**

Ethical conduct on professional interior design including, client's brief, service offered, design team, determined design fees and contract types, contract documents, tender process, site inspection, license and regulations.

IND 4401 **Seminar in Interior Design** **3 Credits**

Design environmental topics or events that are in trend including, interior design, fine arts, furniture design, lighting design, design-related business management, entrepreneurship in interior design business and other related fields. The approach will be topics analysis in class and special lectures from guest lecturers in specialized area from the faculty members from other public or private universities, representatives from design enterprises, or private sectors.

IND 4402 **Advanced Computer-Aided Design** **3 Credits**

Advanced study of computer-aided design including all necessary update software to enhance the creative thinking of interior design students, interior space for exploration, experimentation, methodologies, design and technology context, narrative, computation, and interactivity.

IND 4403 **Model Making and 3D Exploration** **3 Credits**

Elementary concepts, tools and material of sculpturing and crafting by hand skills, training in perception of material, texture, form, scale, volume, 3D and spatial visualization, various media and techniques of the alternated creative possibility, emphasizing upon aesthetic form and conceptual development of personal skills.

IND 4404 **Home Textile and Soft Furnishing** **3 Credits**

Variety of types, colors, texture, and pattern of the home textile, alternated creative possibility, aesthetic appearance, and other factors including strength, durability, performance, and maintenance, the range of textile available in market and process of choosing textile to properly fit the certain usage for all required interior design works.

IND 4405 **Thai Architecture Study** **3 Credits**

Thai architecture and ornaments that have emerged throughout the history, analysis of space, form, decorated motifs, and functions which are reflected in Thai culture and characteristics
applied to the Thai contemporary interior design without losing the mainstream of Thai characteristics.

IND 4406 **Advanced Lighting** **3 Credits**

Theoretical lighting, color, and illumination for interior design, practical functions, aesthetic sense, technical detailed drawing for lighting design session which is needed to be combined into interior design works, lighting design in different interior project scale and type, professional presentation technique for the lighting design package. Site excursion and seminar are also provided.

IND 4407 **Decorative Art** **3 Credits**

Variety of decorative art related to interior design that has emerged throughout the history, perception of arts with aesthetic appreciation, conceptual idea of imaginative interpretation, critical thinking of the artist's philosophy, inspiration, material, creative technique, and cultural influence to the art.

INS 3101 **Principles of Risk Management and Insurance** **3 Credits**

Concepts of risk, terminologies used in risk management and insurance, risk management process and methods of handling risk, principles that underline the field of insurance, various types of insurance contracts, such as property, liability, life, health, and government insurance, nature and operator of the insurance business.

INS 3102 **Insurance Law** **3 Credits**
Prerequisite: *BG 1400 Business Law I*

Insurance law and Ministerial Regulations of the Kingdom pertaining to the contract of insurance in all fields such as life, accident, fire, transportation, and liability court interpretation on applicable coverage, comparison of laws in the U.K. and U.S.

INS 3201 **Property Insurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Analysis of an insurance contract and measurement of property and net income loss exposures of family and business firm in general, major insurance policies and extension available in the Thai market, fire insurance and allied lines, Industrial All Risk business interruption insurance, motor insurance, ocean and inland marine insurance and other modern property insurance for business firm.

INS 3202 **Casualty Insurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Analysis of source of legal liability, major sources of liability loss exposures of both family and business firm and insurance coverage designed to meet those loss exposures, personal liability insurance, public liability insurance, fidelity guarantee insurance, workers' compensation employer's liability insurance, professional liability insurance, products liability insurance, surety bond, and a variety of miscellaneous liability insurance.

INS 3203 **Engineering Insurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Analysis and measurement of property loss exposures of the business firm, major insurance policies and extension including contractor's all risks insurance, erection all risks insurance, machinery breakdown insurance, boiler and *pressure vessel insurance, consequential loss following machinery breakdown, computer all risks insurance and* deterioration of stock.

INS 3301 **Principles of Life Assurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Features of life insurance industry, life insurance contract, life insurance policy, life insurance products and supplemental benefits, life insurance policy provisions, policy ownership rights, paying life insurance policy proceeds and group life insurance.

INS 4103 **Insurance Marketing** **3 Credits**
Prerequisites: *INS 3101 Principles of Risk Management and Insurance*
MKT 2280 Principles of Marketing

Marketing principles and functions of marketing as an integral aspect of major branches of insurance industry with emphasis on sales, promotion, product developments, distribution channels, customer relationship as well as other relevant topics.

INS 4104 **Reinsurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Nature and functions of reinsurance, main types of insurers and reinsurer, legal principles and outline of the international reinsurance market, facultative, and treaty for both proportional and excess of loss reinsurance, including accounts, premium and loss reserves including reinsurance audits.

INS 4105 **Seminar in Insurance** **3 Credits**
Prerequisite: *Senior Standing*

Comprehensive review of all aspects of risk and insurance, various cases of operations of insurance company, topics which are relevant to professional goals and interest of students and current issues in insurance industry with emphasis on research, class discussion, and presentation.

INS 4106 **Information Management in Insurance** **3 Credits**
Prerequisites: *INS 3101 Principles of Risk Management and Insurance*
BIS 2180 Information Technology

Data processing techniques used in pertinent functions in all branches of insurance, specific applications related to policy control, commission, premiums, renewals, branch/broker control and costing, cost analysis and financial analysis, new information technologies such as internet and World Wide Web.

INS 4203 **Marine and Aviation Insurance** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Insurance of cargo by all modes of transportation and from aspects of loss, damage, and liability, pertinent cargo clauses A., B., C., war risk, strike, commodity trades, and other clauses, principles of interest, types and characteristics of vehicles and cargoes, hull Insurance and aviation insurance.

INS 4204 **Property and Casualty Insurance Accounting and Finance** **3 Credits**
Prerequisites: *INS 3101 Principles of Risk Management and Insurance*
ACT 1600 Fundamentals of Financial Accounting

Analysis of insurance accounting and financial statements of the non life insurance company, valuation of insurance company asset, revenues, expenses, liabilities and policyholders' surplus, interpretation of basic financial statements, and Solvency Surveillance.

INS 4205 **Survey and Claim Management in Property and Casualty Insurance** **3 Credits**
Prerequisites: *INS 3201 Property Insurance*
INS 3202 Casualty Insurance

Analysis of the roles and duties of the claim representative, human relations in claim, communication skill, listening skill, claim management, claim professionalism, negotiation process and styles, application of claims practice to transacting insurance business on an industry wide basis, pre-insurance survey and post -loss survey, loss-adjustment techniques using policy wording in each class of business.

INS 4206 **Essentials of Risk Management** **3 Credits**
Prerequisite: *INS 3101 Principles of Risk Management and Insurance*

Losses, loss exposures on both personal and business firm and risk management process, risk management techniques, risk financing and risk control, role of the risk manager in an organization, pre and post loss objective, current issues regarding risk management, medical expense benefit, disability benefit, theory of group insurance, master contract and certificate, various aspects and clauses under group insurance contract including marketing and distribution of group insurance and evaluation of current trends.

INS 4207 **Insurance Management** **3 Credits**
Prerequisites: *INS 3101 Principles of Risk Management and Insurance*
MGT 2900 Principle of Management

Structure and operation of insurance companies and broking companies incorporated in Thailand, managerial practices and problems in insurance companies and broking companies, all main functions and assessment of market needs for both organizations.

INS 4208 **Internship in Property and Casualty Insurance (240 Hours)** **3 Credits**
Prerequisite: *Consent of Department Chairperson*

Students will spend 8 weeks (30 hours/week) internship with selected property and casualty insurance or related business organization. The internship will focus mainly on insurance operations of such organization. Upon completion of the program, the students will be evaluated by their supervisor and submit a detail report of the knowledge gained.

INS 4209 **Directed Studies in Property and Casualty Insurance** **3 Credits**
Prerequisite: *Consent of Department Chairperson*

Under the guidance of the department chairperson, a student must carry out an approved research project in Property and Casualty Insurance. The depth and innovativeness of the research will determine the credit to be given.

INS 4210 **Risk Control and Risk Financing** **3 Credits**
Prerequisites: *INS 3101 Principles of Risk Management and Insurance*
INS 4206 Essential of Risk Management

Two steps of risk management process (1) implementing the selected risk management techniques and (2) monitoring the results for effective control and coordination of the organization's total risk management effect.

INS 4302 **Accident, Group and Health Insurance** **3 Credits**
Prerequisite: *INS 3301 Principles of Life Assurance*

Analysis and measurement of personal loss exposure in respect of family and business firm, scope of coverage and extension of personal accident insurance, health insurance for medical expense benefit, disability benefit, theory of group insurance, master contract and certificate, various aspects and clauses under group insurance contract including marketing and distribution of group insurance and evaluation of current trends.

INS 4303 **Life Assurance Underwriting** **3 Credits**
Prerequisite: *INS 3301 Principles of Life Assurance*

Elementary physiology and anatomy, proposals and medical report forms, main concept and process of life insurance underwriting, underwriting method, underwriting factors and underwriting aspects relating to impairments, diseases and physiological malfunctions.

INS 4304 **Life Assurance Mathematics** **3 Credits**
Prerequisite: *INS 3301 Principles of Life Assurance*

Concepts of life table, probability of death and survival, fundamentals of premium rating, analysis of components and essential factors of premium rate calculation, reserve calculation and various types of reserve in life insurance.

INS 4305 **Claim Management in Life Assurance** **3 Credits**
Prerequisite: *INS 3301 Principles of Life Assurance*

Administrative aspects of payments with respect to death and disability claims, maturity and annuity payments, surrenders and partial surrenders of policies, loans on policy and dividends, claim decision process, analyzing claims for life insurance and supplementary benefits, and paying life insurance claims.

INS 4306 **Life Assurance and Financial Planning** **3 Credits**
Prerequisites: *INS 3301 Principles of Life Assurance*
FIN 2700 Money, Banking and Financial Markets

Introduction to financial planning and personal financial planning process, uses of life insurance, life annuities, health insurance and social security in the financial planning scheme, risk analysis concept together with integration of social security benefits, employer-provided benefits, individually purchased life insurance and investments into a comprehensive financial plan including life insurance planning and purchasing decision, financial health check/ personal financial fact-finding as well as the investment planning

INS 4307 **Life Assurance Agency Administration** **3 Credits**
Prerequisites: *INS 3301 Principles of Life Assurance*
MKT 2280 Principles of Marketing

Life insurance agency office management concepts, agency organization and structure, ways to improve communication and workflow between insurer and agency offices, ways to organize agency office to maximize efficiency and to provide more effective sales support for agency force, office productivity, agency expenses and budgetary control, compliance and sales practices, supervisory skills, people management techniques and agency office automation.

INS 4308 **Managing for Solvency and Profitability in Life Assurance** **3 Credits**
Prerequisites: *INS 3301 Principles of Life Assurance*
FIN 2700 Money, Banking and Financial Markets

Solvency, liquidity and profitability of life insurance companies, with emphasis on financial management of insurance company, how life insurance companies pursue the key financial objectives, insurance financial statement analysis, product planning, product design and pricing for insurance company product, concept of how insurance company executives approach capital management and monitor the financial performance of Life Insurance Company.

INS 4309 **Internship in Life Assurance (240 Hours)** **3 Credits**
Prerequisite: *Consent of Department Chairperson*

Students will spend 8 weeks (40 hours/week) internship with selected life assurance or related business organizations. The internship will focus mainly on insurance operations of such organizations. Upon completion of the program, the students will be evaluated by their supervisor and submit a detail report of the knowledge gained.

INS 4310 **Directed Studies in Life Assurance** **3 Credits**
Prerequisite: *Consent of Department Chairperson*

Under the guidance of the Department advisor, a student must conduct a research in an approved area of life assurance. The depth and innovativeness of the research will determine the credits given.

IT 2130 **Systems Science** **3 Credits**

Basics of systems (its inputs, outputs and environment, and its behavioral characteristics), general system theory, classification of systems, hierarchy of systems, and adaptability of system, various approaches to system thinking such as cybernetic, cybernetic principles and applications, system dynamics, operation research, and systems analysis.

IT 2172 **Programming Workshop** **4 Credits**
Prerequisite: *SC 1101 Computer Programming I*

Further development of practical problem solving and programming concepts and skills developed in SC1101, using object-oriented concepts and the C++ language

IT 2210 **File Structures and Processing** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*
or *SC 2101 Computer Programming II*

File structures, file organizations, basic data structures for file organizations and management, different file organizations and accessing methods such as sequential file, relative file, indexed file, and multi-key file, programming in Pascal or C.

IT 2220 **Computer System Concepts** **3 Credits**
Prerequisite: *IT 2231 Introduction to Information Technology*

Computer system organization, internal data representation, computer operations, overview of computer system configuration (CPU, memory unit, I/O unit), fundamentals of operating systems e.g. compiling, linking, loading, and executing program instructions, instruction cycle, basic instruction set, elements of instructions, and addressing modes.

IT 2230 **Information Structures** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Various types of data structures (primitive, simple, structured, linear, and nonlinear data types), applications developed under aforementioned data structures, tradeoffs and criteria for selecting the appropriate data structure, searching and sorting techniques.

IT 2231 **Introduction to Information Technology** **3 Credits**

Various types of information technology, effect of information technology on the information systems, computer operations, communication systems, information processing, input/output devices, processors, storage and retrieval techniques, communication technology, and applications of current technology in information systems.

IT 2371 **Object Oriented Programming I** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Widely used commercial object-oriented programming language Java, development of basic object-oriented concepts and skills, design and coding of application programs in the environment of the Java language.

IT 3210 **Database Management Systems** **3 Credits**
Prerequisite: *IT 2230 Information Structures*

Data structure, principles of database, database system, database management system, application of database in information systems.

IT 3211 **Information Storage and Retrieval** **3 Credits**
Prerequisite: *IT 3210 Database Management Systems*

Kinds and characteristics of information systems, data files in computer systems, inverting files, analysis of the safety and integrity of information systems.

IT 3230 **Management Information Systems** **3 Credits**
Prerequisite: *IT 2231 Introduction to Information Technology*

Role of information systems that affect decision making and organization, characteristics and structures of management information systems, management and decision-making styles, information systems and organization structures, MIS planning, MIS applications and other trends of information systems.

IT 3231 **Information Systems Analysis** **3 Credits**
Prerequisite: *IT 2231 Information Technology*

System development life cycle, analysis of system's requirements, information requirements for management, tools and techniques used to analyze an information system and determine system's requirements, management and control of system development.

IT 3232 **Information Systems Design** **3 Credits**
Prerequisite: *IT 3231 Information Systems Analysis*

Design techniques for information systems, I/O design, processing design, control design, file and database design, system testing design, implementation phases and procedures, and system maintenance and review.

IT 3253 **Data Communication and Networking** **3 Credits**
Prerequisite: *IT 2231 Information Technology*

Different network types, various network media and topologies, functions of each layer of the ISO-OSI model, various alternatives in interconnecting networks such as routers, switches, bridges, and gateways, fundamental concepts of data communication, transmission media, computer and data equipment interfaced and interconnected, valid information transfer, security issue, cost effectiveness of data communication.

IT 3351 **Web Design and Development I** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Web-based design and development, the internet, the worldwide web, HTML fundamentals, images and multimedia, page and site design issues, modern web development technologies, (e.g. ASP.NET), user interface and development environments.

IT 3352 **Database Application Workshop** **3 Credits**
Prerequisite: *Senior Students and by the consent of the instructor*

Workshop to develop multiple-form applications, organize and manage them across modules, concepts of building forms and reports, development of current applications with custom menus, reports, and charts, advantages and disadvantages of various forms and report methods, retrieve and display data through appropriate use of forms and reports using Oracle Developer 2000.

IT 3371 **Object Oriented Programming II** **3 Credits**
Prerequisite: *IT 2371 Object Oriented Programming I*

Extension of concepts and skills developed in IT 2371, practical skills and ability to design and implement application programs, using advanced features of the Java programming language.

IT 3372 **Visual Programming** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Practical use of visual programming concepts, tools and techniques, use of visual programming for the rapid development of user-centered applications.

IT 4299 **Senior Project** **3 Credits**
Prerequisite: *The fourth-year students with at least 100 Credits*

Specific project which requires students to design and develop a real information system, analyze the problem, define the solution, and design the system by applying information technology concepts, The instructors will advise students throughout the project development. The students will have an oral examination on their projects.

IT 4311 **Introduction to Computer Graphics** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Foundations of computer graphics, characteristics of computer graphics on graphic monitors, computer software for three dimensional graphics, techniques for creating animation, use of a sophisticated language such as C to enhance the computer graphic design.

IT 4314 **Software Engineering Concepts** **3 Credits**
Prerequisite: *IT 3232 Information System Design*

Software life cycle, analysis of requirements, structured software design, development, implementation, testing, and maintenance of software, reusable software, documentation and software manuals, and software project management.

IT 4315 **Object Oriented Software Analysis and Design** **3 Credits**
Prerequisite: *IT 3232 Information System Design*

Object-oriented software development paradigm, basic knowledge to embark on an object-oriented software development endeavor, standard modeling approach for describing object-oriented system design.

IT 4316 **Image Processing** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Concepts of image processing including digital image, image viewing, encoding images for memory storage, retrieving images from memory for processing, analysis of images.

IT 4340 **Introduction to Information Resource Management** **3 Credits**
Prerequisite: *IT 2231 Information Technology*

Management of information resources and database, design acquisition, implementation and management of computer-based system, systematic approach to information resource management.

IT 4357 **Human Computer Interaction** **3 Credits**
Prerequisite: *Senior Students and by consent of instructor*

Basic knowledge about human behavior, interaction between humans and computers, overview of a number of research areas in human-computer interaction, design of computer interfaces to fit with the concepts of usability, accessibility and trustworthiness.

IT 4358 **Expert Systems** **3 Credits**
Prerequisite: *Senior Students and by the consent of the instructor*

Basic knowledge of expert systems including techniques used to develop and implement expert systems with the analytical and validation method.

IT 4359 **E-Commerce** **3 Credits**
Prerequisite: *Senior Students and by the consent of the instructor*

Various components that shape e-commerce systems, components, inherent technologies, pertinent design and development issues, management strategies for business-to-business, business-to-consumer, intra-business domains, information appliances, computing networks, application and service repositories, application access infrastructure, systems security, implementation risks.

IT 4360 **Multimedia Applications** **3 Credits**
Prerequisite: *IT 2231 Information Technology*

Basic ideas, theory, practical uses of multimedia for presenting and conveying information, windows and multimedia, sound recording, image processing, animation, electronic composing, multimedia databases, virtual reality and cyberspace, overview of multimedia products.

TS 4261 **Internetworking Workshop I** **4 Credits**

Fundamentals of internetworking connectivity concepts, components and protocols (i.e. flow control protocols, error checking mechanisms, and routing protocols), data encapsulation, network addressing, Local Area Network (LAN) technologies, basic LAN design and implementation, and basic network devices configurations.

TS 4262 **Internetworking Workshop II** **4 Credits**
Prerequisite: *TS 4261 Internetworking Workshop I*

Design and implementation of small to medium size Local Area Networks (LANs) emphasizing LAN switching concepts, protocols, features and technologies and LAN switch configuration, introduction to Wide Area Network (WAN) technologies, encapsulation protocols, design and implementation, hands-on experiences in adding network security, and efficiently uses of IP network services.

IT 4363 **Information System Security and Auditing** **3 Credits**
Prerequisite: *Senior Students and by the consent of the instructor*

Fundamentals of computer security including hardware security, software security, database security, computer networks and telecommunication security, physical protection and microcomputer security and viruses, cryptographic technology, disaster recovery and contingency planning, intrusion detection and other applications, legal and ethical issues in computer security.

IT 4366 **Advanced Data Management Systems** **3 Credits**
Prerequisite: *IT 3210 Database Management System*

Relational database model, data storage and management object-relational and object-oriented databases, data mining, on-line analytic processing, data marts, data warehousing, WWW database applications and role of the database administrator.

IT 4367 **Web Design and Development II** **3 Credits**
Prerequisite: *IT 3351 Web Design and Development I*

Advanced topics on developing web application including using XML to extend web capabilities, creating and using web service, application configuration, tuning up performance, application deployment and security issues, advanced topics on database such as using store procedure, persisting data with XML, standard web application architectures such as e-commerce, portal site, community site.

IT 4400-99 **Selected Topic** **3 Credits**
Prerequisite: *The fourth-year students and by the consent of the instructor*

Special topics that is appropriate for detailed study and research. The topic selected depends on the student's need and the instructors' requirements and is in accordance with the current change of information technology in that period.

JA 0721 **Japanese for Beginners I** **3 Credits**

Japanese pronunciation, vocabulary and some basic sentences patterns focusing on the skills of listening and speaking in everyday Japanese language

JA 0722 **Japanese for Beginners II** **3 Credits**
Prerequisite: *JA 0721 Japanese for Beginners I or by the consent of the instructor*

Vocabulary, more basic sentence patterns to develop the skills of listening and speaking

JA 0723 **Reading and Writing Japanese Scripts** **3 Credits**

Japanese scripts-Hiragana and Katakana, 50 basic kanji, greetings, and basic sentence patterns used in daily Japanese conversation

JA 1700 **Introduction to Japanese** **3 Credits**

Basics of Japanese language, scripts, Japanese sound system, basic grammar and practice of listening, and speaking.

JA 1701 **Japanese I** **3 Credits**
Prerequisite: *JA 1700 Introduction to Japanese*

Basic grammar, more vocabulary of daily usage and further development of skills in listening, understanding, speaking and writing.

JA 2701 **Japanese II** **3 Credits**
Prerequisite: *JA 1701 Japanese I*

Further practice in listening, speaking, writing and reading, higher level of grammatical structures and proficiency in expression and conversational skills.

JA 2702 **Japanese III** **3 Credits**
Prerequisite: *JA 2701 Japanese II*

Further acquisition on Japanese grammar, vocabulary, oral expression and reading drills of original texts from various areas of Japanese life and culture, and intensive practice on writing and comprehension skills.

JA 2703 **Basic Reading and Writing I** **3 Credits**
Prerequisite: *JA 1701 Japanese I*

Principles of reading and writing, reading simple texts, types of sentences, and practice in writing topics of everyday life

JA 2704 **Basic Reading and Writing II** **3 Credits**
Prerequisite: *JA 2703 Basic Reading and Writing I*

Reading and writing more complicated texts and topics.

JA 3701 **Intermediate Japanese Grammar** **3 Credits**
Prerequisite: *JA 2702 Japanese III*

Intermediate grammatical structures and vocabulary for listening, speaking, reading and writing more complicated topics

JA 3702 **Business Japanese I** **3 Credits**
Prerequisite: *JA 2702 Japanese III*

Integrated skills of listening, speaking reading, and writing in business contexts

JA 3704 **Oral Comprehension and Expression** **3 Credits**
Prerequisite: *JA 2702 Japanese III*

Reading, outlining and summarizing oral and written texts related to business and various fields of Japanese Culture, skills of listening and hearing comprehension, discussion and versed expression of opinions

JA 3721 **Introduction to Japanese Linguistics** **3 Credits**
Prerequisite: *JA 2702 Japanese III*

Vocal and consonantal systems of the Japanese language, special features of the language, phonetics, phonemics, sentence patterns and a complete grammatical analysis

JA 3722 **Japanese Reading and Oral Report** **3 Credits**
Prerequisite: *JA 2702 Japanese III*

Reading comprehension skills of various Japanese articles and summarizing through oral presentations

JA 3723 **Introduction to Japanese Phonetics** **3 Credits**
Prerequisite: *JA 2701 Japanese II*
GL 1101 Elements of Spoken Language

Accurate Japanese pronunciation, and Japanese phonological system and intensive practice on the articulation of various Japanese sounds

JA 3724 **Aspects of Japan** **3 Credits**
Prerequisite: *JA 2701 Japanese II*

Japanese lifestyle, thought patterns, civilization and interdisciplinary studies about Japan

JA 3725 **Japanese for Secretaries** **3 Credits**
Prerequisite: *JA 2702 Japanese III or by the consent of the instructor*

Skills and correctness in hearing, speaking, reading and writing of the Japanese language according to secretarial framework, principles and techniques of business communication, practice of composing many types of letters, memos and reports

JA 3726 **Japanese for Tourism** **3 Credits**
Prerequisite: *JA 2702 Japanese III or by the consent of the instructor*

Practice of Japanese language for tour guides and tour management

JA 3727 **Japanese for Hotels** **3 Credits**
Prerequisite: *JA 2702 Japanese III or by the consent of the instructor*

Japanese used in rendering hotel services

JA 3728 **Japanese for Airline Services** **3 Credits**
Prerequisite: *JA 2702 Japanese III or by the consent of the instructor*

Japanese used in airline industry: customer services, reception and hospitality

JA 3729 **Survey of Japanese Literature** **3 Credits**
Prerequisite: *JA 2702 Japanese III or by the consent of the instructor*

Survey of Japanese literary works in prose, poetry and drama, the main movements in Japanese thought from the Middle Ages to the present day, readings, discussions and analyzing of the eminent writers and their products as contributions to modern Japanese thinking

JA 4701 **Reading in Business Japanese I** **3 Credits**
Prerequisite: *JA 3702 Business Japanese I*

Reading and analyzing various business-related articles

JA 4702 **Business Writing in Japanese I** **3 Credits**
Prerequisite: *JA 3702 Business Japanese I*

Writing business-related documents: e-mail, resume, forms, and business reports

JA 4703 **Translation I: Japanese - Thai** **3 Credits**
Prerequisite: *JA 3702 Business Japanese I*

Purposes, methods and techniques of translation from Japanese into Thai, development of skills in analyzing sentence patterns of the Japanese language, the use of words, idioms and structure for accuracy in meaning and style of original document

JA 4704 **Translation II: Thai - Japanese** **3 Credits**
Prerequisite: *JA 3702 Business Japanese I*

Purposes, methods and techniques of translation from Thai into Japanese, development of skills in analyzing sentence patterns of the Thai language, the use of words, idioms and structures for accuracy in meaning and style of original document

JA 4721 **Japanese Conversation and Discussion** **3 Credits**
(Only for international students)
Prerequisite: *JA 3704 Oral Comprehension and Expression*

Conversation skills on various topics of everyday life including some business topics

JA 4722 **Reading in Business Japanese II** **3 Credits**
Prerequisite: *JA 4701 Reading in Business Japanese I*

Advanced reading comprehension skills of various business-related Japanese articles

JA 4723 **Business Writing in Japanese II** **3 Credits**
Prerequisite: *JA 4702 Business Writing in Japanese I*

Practice of writing skills through intensive practical exercises in grammar and vocabulary, writing documents related to business: curriculum vitae, advertisement, signs used in business, such as in hotels, restaurants, airports, companies, etc.

JA 4724 **Business Japanese II** **3 Credits**
Prerequisite: *JA 3702 Business Japanese I*

Advanced communication skills for various business interactions

JA 4725 **Translation in Business Japanese** **3 Credits**
(Only for international students)
Prerequisite: *JA 3702 Business Japanese I*

Intensive practice on translating business data from newspaper, texts, magazines, etc. from Japanese into Thai or English and vice-versa

JA 4726 **Public Speaking in Japanese** **3 Credits**
Prerequisite: *JA 3704 Oral Comprehension and Expression*

Basic principles of speech and voice production and proficiency in their use; skills common to all forms of communication; the selection and evaluation of materials for speech; organization, thought, voice, action, and the optimal speaker-listener relation

JA 4727 **Seminar** **3 Credits**
Prerequisite: *By the consent of the instructor*

Discussion on selected topics about problems in using business Japanese and the various means of communication and translation or other interesting topics through panel discussions, workshops or field studies

LW 1101 **Juristic Acts and Contracts Law** **3 Credits**

The Civil and Commercial Code, Book 1, Title 4 on Juristic Acts, Title 5 on Periods of Time and Title 6 on Prescription and Book 2, Title 2 on Contracts.

LW 1102 **Property and Land Law** **3 Credits**

Principles of law relating to property according to the Civil and Commercial Code, Books 1 and 4 as well as land law according to the Land Act and other laws involved.

LW 1201 **Criminal Law I** **3 Credits**

Criminal law, theories of criminal liability, scope of criminal law, attempt, principals and accessories, concurrence of offenses, recidivism, prescription, penalties and criminological and enological theories.

LW 1501 **Principles of Private Law** **3 Credits**

Definition, development, concept, role, and importance of private law as well as application and interpretation of law, fundamental principles of civil and private law, origins of laws, divisions and categories of civil law according to Book 1 of the Civil and Commercial Code.

LW 1502 **Principle of Public Law** **2 Credits**

Organizations in area of public law, definition, components, forms of governmental sector including juristic person, specific characteristics; concept, and legal procedure of public law.

LW 1503 **Thai Legal History** **2 Credits**

Thai cultural and social history which is the origins of important Thai legal institutions and the influence of Indian and Western philosophies, legal principles and legal system on Thai law. A study of the development of Thai law from the past to the present, especially from the era of compiling law codes with emphasizing on comparative law order to enhance the students' understanding of Thai legal system. A study of legal theories and notions, relationship between law and other sciences, origins of law, important legal systems, nature of law, types of law, drafting and repealing of law, application and interpretation.

LW 1504 **Constitutional Law** **3 Credits**

History and development of the Constitution, various governmental organizations, right and liberty of people, important constitutional theories, such as theory of division of powers and theory of judicial reviews including various philosophies of the constitutional systems.

LW 2103 **Obligations Law** **3 Credits**

Significance of law, types, sources, subjects, performance and effects of obligations according to the Civil and Commercial Code Book 2, Title 1, Chapters 1 and 2, Pat 1 and preferential rights arising from debt, plurality of creditors and debtors, transfer of claims and extinction of obligations according to the Civil and Commercial Code Book 2, Title 1, Chapter 2, Part 2-6 and Titles 3, 4 and 5.

LW 2104 **Law of Delict** **3 Credits**

Torts, management without mandate and undue enrichment according to the Civil and Commercial Code, Book 2.

LW 2105 **Insurance Law** **2 Credits**

Principles of law relating to insurance according to the Civil and Commercial Code, Book 3, and the legislation concerning loss and life insurances.

LW 2106 **Specific Contracts I** **3 Credits**

Principles of law relating to sale, exchange, gifts, hire of property, and hire-purchase according to the Civil and Commercial Code Book 3.

LW 2107 **Partnership and Company Law** **3 Credits**

Principles of law relating to the organization, operation and liquidation of ordinary partnerships, registered partnerships, limited partnerships, limited companies, and public companies and securities regulations.

LW 2108 **Negotiable Instruments and Current Accounts Law** **2 Credits**

Negotiable instruments and current accounts according to the Civil and Commercial Code, Book 3 Titles 21 and 19.

LW 2202 **Criminal Law II** **2 Credits**
Prerequisite: *LW 1201 Criminal Law I*

Specific offenses including those concerning the security of the kingdom, religion, public peace, public danger, forgery, trade, and sex.

LW 2203 **Criminal Law III** **3 Credits**
Prerequisite: *LW 1201 Criminal Law I*

Specific offenses including those concerning life and body, liberty, reputation, and property as well as petty offenses.

LW 2505 **Administrative Law** **2 Credits**

Thai administrative system, the relationship among political governmental organization, rights between public and private sectors, such as public service management, and concession.

LW 2601 **Public Finance Law** **2 Credits**

Law of public finance concerning financial matters, treasury, budget control, financial institutions, the economic principles relating to financial matters, and treasury employed by the government in the administration of the country.

LW 2602 **Computer Law and Computer for Legal Research** **3 Credits**

Law on computer and application of computer to legal research, information collection and legal services, general principles, application of computer to legal works and information services.

LW 3001 **English for Lawyers I** **2 Credits**

English legal terminology including definitions and examples of English words used in general principles of law.

LW 3002 **English for Lawyers II** **2 Credits**

Vocabularies and English legal terminologies used in several legal areas.

LW 3109 **Specific Contracts II** **3 Credits**
Prerequisite: *LW 2106 Specific Contracts I*

Law on hire of services, hire of work, carriage according to the Civil and Commercial Code, Book 3, loan, deposit, warehousing, agency, brokerage, compromise and gambling and betting.

LW 3110 **Family Law** **3 Credits**

The Civil and Commercial Code Book 5.

LW 3111 **Secured Transactions Law** **2 Credits**

Principles of law relating to surety ship, mortgage, and pledge according to the Civil and Commercial Code Book 3.

LW 3112 **Succession Law** **3 Credits**

The Civil and Commercial Code Book 6.

LW 3301 **Civil Procedural Law** **4 Credits**

General provisions on civil procedure and the procedure at trial court level, appeal court and Supreme Court.

LW 3302 **Criminal Procedural Law** **4 Credits**

Analysis of criminal procedure according to the Criminal Procedure Code with emphasizing on authorities and duties of officials, scope of investigation arrests, interrogation, confinement, prosecution, trial, appeals, and execution of judgment.

LW 3303 **Constitution of Courts of Justice and Judicial System** **2 Credits**

Constitution of Court of Justice, judiciary, court jurisdiction, judicial powers in trial, and judicial systems.

LW 3304 **Civil Procedural Law on Execution of Judgment and Orders** **2 Credits**
Prerequisite: *LW 3301 Civil Procedural Law*

Principles of law of provisional measures and execution of judgments and orders.

LW 3305 **Evidence Law** **3 Credits**

Basic and general principles of evidence and provisions appearing in the Civil Procedure Code and Criminal Procedure Code.

LW 3306 **Bankruptcy Law** **3 Credits**

Nature and objectives of bankruptcy law comparing civil proceedings with bankruptcy proceedings, the history of Bankruptcy Law, and Bankruptcy Law including rehabilitation.

LW 3401 **Public International Law** **3 Credits**

International laws during peacetime and wartime, court jurisdictions in criminal cases under international law principles, and extradition.

LW 3602 **Tax Law I** **3 Credits**
Prerequisite: *LW 2601 Public Finance Law*

Revenue Code in respect of personal income tax and corporate income tax.

LW 3603 **Tax Law II** **2 Credits**
Prerequisite: *LW 2601 Public Finance Law*

The Revenue Code in respect of value-added tax and double tax treaties.

LW 4113 **Seminar in Civil and Commercial Law** **2 Credits**

A seminar in important Civil Procedure Code topics.

LW 4204 **Criminology and Penology** **2 Credits**

Relationship between criminological theories and criminal law, criminal procedure, criminal procedure according to guidelines of criminologists in order to study criminological theories from past to present, classification of crimes and criminals to prevent crimes, scope of enforcement of criminal law and social philosophies in respect of punishment and treatment of offenders.

LW 4205 **Criminal Investigation** **2 Credits**

Criminal investigation with emphasizing on law enforcement, scientific investigations, evidence finding, interrogation, proof and examination of evidence and witnesses.

LW 4206 **Seminar in Criminal Law** **2 Credits**

Seminar in important Criminal Law topics.

LW 4307 **Juvenile and Family Law** **2 Credits**

Juvenile offenses and judicial system as well court procedure in such cases and family cases.

LW 4308 **Administrative Court and Administrative Procedure** **2 Credits**

Role of administrative courts including court jurisdiction as well as legislation relates to administrative procedure and implementation of administrative judgment.

LW 4309 **Seminar in Civil Procedural Law** **2 Credits**
Prerequisite: *LW 3304 Civil Procedural Law on Execution of Judgment or Orders of a court.*

Seminar in important civil procedural law topics.

LW 4310 **Seminar in Criminal Procedural Law** **2 Credits**
Prerequisite: *LW 3302 Criminal Procedural Law*

Seminar in important criminal procedural law topics.

LW 4402 **Private International Law** **3 Credits**

General nature of private international law, distinction between citizenship's according to the Nationality Act (nationality of persons, acquisition and loss of nationality under Thai law, domicile, residence, nationality and domicile of juristic persons, rights and status of aliens) conflict of laws, and private international law trial.

LW 4403 **International Economic Law** **2 Credits**

Rules and economic relationship among developed countries and developing countries in 1) General Agreement on Tariffs and Trade (GATT) to analyze agreements in multilateral trade negotiations, the negotiations within the GATT framework and foreign economic laws which effect Thai export, 2) the International Monetary Fund to analyze the rules of lending in the case of deficit, indebtedness and development and 3) rules to control transnational companies.

LW 4404 **Maritime Law** **2 Credits**

Laws on water transport, ships, agreements on carriage of goods by sea; collision at sea, salvage at sea, laws of towage, and laws concerning international sea for vessels.

LW 4405 **Law of the Sea** **2 Credits**

Economic and political importance of the sea to humanity, philosophies on use and possession of the sea, definition and development of international law of sea, present problems in respect of international law concerning the sea and sea bed which in beyond state boundaries, sea territories, exclusive economic zones, international waters, specific problems of ephilagic state, environmental control, scientific research, technological development , solutions for disputes arisen amongst states, importance of sea to Thailand and Thailand's roles and view toward problems concern.

LW 4406 **International Organization Law** **2 Credits**

Development of international organizations, structures, powers and duties of the League of Nations and various organs of the United Nations, such as the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the Secretariat and the International Court of Justice, the powers and duties of specialized agencies such as the International Labor Organization, the United Nations Educational, Scientific and Cultural Organization and the World Health Organization and region organizations such as the European Union, Association of South-East Asian Nations (ASEAN).

LW 4407 **Human Rights Law** **2 Credits**

Definition and philosophy behind human rights, protection of human rights under the League of Nations and the United Nations, protection of human rights at regional levels, such as Europe, America, Africa and Arab States, the protection of human rights in Thai law.

LW 4408 **ASEAN Law** **2 Credits**

Evolution of Regionalism in Southeast Asia and ASEAN prior to the adoption of ASEAN Charter; ASEAN Free Trade Agreement (AFTA), ASEAN Trade in Goods Agreement (ATIGA); ASEAN Framework Agreement on Services (AFAS); Framework Agreement on the ASEAN Investment Area (AIA); ASEAN Comprehensive Investment Agreement (ACIA); Asian Economic Community (AEC), ASEAN Charter and its legal issues and implications; legal criteria of regional groupings according to General Agreement on Tariffs and Trade (GATT) and The Marrakesh Agreement Establishing The World Trade Organization (WTO Agreement); legal criteria of international organizations in light of international law, and ASEAN's relationships with outside powers.

LW 4506 **Philosophy of Law** **2 Credits**

Development of legal philosophies from past to present and root of problems of Law.

LW 4507 **Military Law** **2 Credits**

The Constitution of Military Court, the Military Criminal Code, military disciplines, and martial law.

LW 4508 **Environmental Law** **2 Credits**

Causes of environmental problems and their effects of life, society and country, governmental control of problems studied from state policy and competent offices, environmental law on protection of air, water and land and litigations for damages in case of environmental problems.

LW 4509 **Introduction to American and English Legal System** **2 Credits**

Origins, scope and development of common law system in the US and UK. This course also focuses on roles and functions of various legal institutions and professions, relationships between federal and state law in the US, relationships between English law and European Union law, framework of American and English legal education, and structure of partially significant law in both countries.

LW 4510 **Forensic Medicine** **2 Credits**

History and objective of forensic medicine, autopsy, human identification, forensic finger print, investigation of crime and death and investigation of death by accident.

LW 4511 **Principles of Legal Profession** **2 Credits**

Development of legal profession, responsibility and work of lawyers in various branches, lawyer's etiquettes and ideals and various organizations formed to monitor people in the legal profession.

LW 4604 **Labor and Social Security Law** **3 Credits**

Principles of labor law, history of labor law in Thailand, present labor law of Thailand relating to labor protection, labor relations, labor management, alien workers and guidelines for consideration and interpretation of various problems relating to labor and social security law.

LW 4605 **Intellectual Property Law** **3 Credits**

Nature of various types of intellectual property with emphasizing on copyright, patents and trademarks, domestic copyright protection, international copyrights protection, protection of patent, trademarks and copyright under Thai law, protection of other types of intellectual property such as rights over trade name, trade secrete as well as developing countries' policy in drafting patent law.

LW 4606 **International Business Transactions Law** **2 Credits**

Legal problems which may arise from international business operations with emphasizing on doing business with developed countries, especially with member states of the European Union and the United states, legal status of international protection for companies, certain legal perspectives of international contracts (such as F.O.B. and C.I.F.) and process of arbitration for international business.

LW 4607 **Banking and Financial Institutions Law** **2 Credits**

Roles of commercial banks and other financial institutions, control and support policies as well as banking and financial institutions laws.

LW 4608 **Securities and Securities Exchange Law** **2 Credits**

Development of securities exchange market in Thailand and its management various institutions involved, issuance and exchange of securities, control and operation of securities business, tax law and accounting relating to securities exchange, legal measures of various problems of securities exchange.

LW 4609 **Principles of Contract Drafting** **2 Credits**

Methods and problems in drafting various types of contract, contract forms, laws involved, and contract samples.

LW 4610 **Investment Law** **2 Credits**

Importance of investment, Thai economic structure, policies and laws involved especially those of developing countries, laws on direct investment, portfolio investment, financial institutions and other laws which effects on investment.

LW 4611 **Counseling and Advocacy** **2 Credits**

Practice of legal counseling by giving legal advice to public by learning to solve hypothetical problems under supervision of an advisor, drafting of various contracts, establishment and management of law firms and legal consulting firms. A study of all procedure involved in litigation such as case preparation, drafting of complaints, replies, motions and petitions, litigation techniques; for example, evidence presentation, witness examination, verbal statement, judgment, filing appeals as well as enforcement of a judgment or order of a court.

LW 4612 **Customs Law** **2 Credits**

Nature and objectives of law of customs and excise, development and origins of law, liability to pay customs, customs procedure, offenses under customs law, authorities and duties of customs officials, litigation of customs cases, rules on tariffs, exemption of customs, interpretation of tariffs, customs exemption as well as customs law and investment promotion and customs law and industrial estates.

LW 4613 **Industrial Law** **2 Credits**

Principles of law relating to industrial operations and rules, regulations and legal problems arising from industrial operations.

LW 4614 **Real Estate Law** **2 Credits**

Nature of use and business exploitation of land by private sector, law controlling such business, law on residence, commercial building, condominium, shopping center and resort management and practice and contracts concerning real estate business.

LW 4615 **Tax Law III** **2 Credits**

Additional important tax laws concerning business, such as signboard tax, building and land tax and municipal tax.

LW 4616 **Consumer Protection Law** **2 Credits**

Various laws with the objectives to protect the consumer's rights especially consumer protection law with emphasizing on advantages and drawbacks of Thailand's consumer protection law in order to give suggestion importance of legal measures in consumer protection.

LW 4617 **Anti-Monopoly Law** **2 Credits**

Anti-monopoly and its effects on consumers, economy and national security, anti-monopoly laws, market sharing, concerted practices of traders, factory owners of trade associations, and price and production agreements.

LW 4618 **Commercial Arbitration Law** **2 Credits**

Thai Arbitration law, rule and regulation concerning arbitration of the Thai Chamber of Commerce, the International Chamber of Commerce and other important organizations, arbitration treaties and the execution of arbitral awards.

LW 4619 **Natural Resources Law** **2 Credits**

Laws on petroleum, minerals, forests, and etc.

LW 4620 **Seminar in Tax Law** **2 Credits**
Prerequisite: *LW 3602 Tax Law I*

A seminar in important tax law topics.

LW 4621 **Seminar in Business Law** **2 Credits**

Seminar in important business law topics.

LW 4622 **Electronic Commerce Law** **2 Credits**

Fundamental legal issues relating to transactions made by any electronic means, for example, a sale of goods or services via internet or electronic data interchange important legal issues as well as issues involving formation of contract, legal status of electronic signatures, legal requirements as to writing or original in relation to electronic records, and admissibility in evidence of electronic records, various perspectives of data protection and computer crimes, both positions of Thai laws and legal development of foreign laws including model or uniform laws initiated by establishing international organizations such as UNCITRAL or EU.

LW 4623 **Computer and Law: A Seminar Course** **2 Credits**

Seminar in legal problems that could result in developing to make use of data and information that might result in violation of right holders, crimes related to intellectual property rights and computer crime law.

MA 0610 **Music Ensemble** **2 Credits**

Ensemble in vocal, string, woodwind, and brass.

MA 1101 **Applied Composition I** **2 Credits**

Exploration and development of techniques used in fine art composition. Creation of short compositions in various media.

MA 1102 **Applied Composition II** **2 Credits**
Prerequisite: *MA 1101 Applied Composition I*

Further development of techniques used in fine art composition. Creation of short compositions in various media.

MA 1300 **Introduction to Applied Music** **1 Credit**

Introduction to performance techniques and interpretation of fine art music.

MA 1301 **Applied Music I** **2 Credits**

Development of performance techniques and interpretation of fine art music, based on student's selection of instrument.

MA 1302 **Applied Music II** **2 Credits**
Prerequisite: *MA 1301 Applied Music I*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 1401 **Piano Harmony I** **2 Credits**

Piano techniques including sight reading, clef reading improvisation, transposition, figured bass, analysis and accompanying.

MA 1402 **Piano Harmony II** **2 Credits**
Prerequisite: *MA 1401 Piano Harmony I*

A continuation from Piano Harmony I. Piano techniques including sight reading, clef reading improvisation, transposition, figured bass, analysis and accompanying.

MA 1600 **Basic Guitar Instructions** **1 Credit**

Basis of guitar studies. The class will be divided into small groups of students.

MA 1700 **Basic Vocal Instructions** **1 Credit**

Basis of vocal studies. The class will be divided into small groups of students.

MA 2101 **Applied Composition III** **2 Credits**
Prerequisite: *MA 1102 Applied Composition II*

Further development of techniques used in fine art composition. Creation of short compositions in various media.

MA 2102 **Applied Composition IV** **2 Credits**
Prerequisite: *MA 2101 Applied Composition III*

Further development of techniques used in fine art composition. Creation of short compositions in various media.

MA 2301 **Applied Music III** **2 Credits**
Prerequisite: *MA 1302 Applied Music II*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 2302 **Applied Music IV** **2 Credits**
Prerequisite: *MA 2301 Applied Music III*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 2501 **Chorus I** **1 Credit**

Development of group singing skills, basic vocal production and techniques, sight-singing skills, practice variety of choral works in unison, cannon and simple arrangement. Attending the choral concert and performing one major concert are required.

MA 2502 **Chorus II** **1 Credit**
Prerequisite: *MA 2501 Chorus I*

Development of group singing skills, early intermediate vocal production and techniques, sight-singing skills, practice variety of choral works in 2-4 parts harmony. Attending the choral concert and performing one major concert are required.

MA 2503 **Chorus III** **1 Credit**
Prerequisite: *MA 2502 Chorus II*

Development of group singing skills, intermediate vocal production and techniques, sight-singing skills, and practice variety of choral works. Attending the choral concert and performing one major concert are required.

MA 2504 **Chorus IV** **1 Credit**
Prerequisite: *MA 2503 Chorus III*

Development of group singing skills, advanced vocal production and techniques, sight-singing skills, and practice variety of choral works. Attending the choral concert and performing one major concert are required.

MA 3101 **Applied Composition V** **2 Credits**
Prerequisite: *MA 2102 Applied Composition IV*

Further development of techniques used in fine art composition. Creation of medium length compositions in various media.

MA 3102 **Applied Composition VI** **2 Credits**
Prerequisite: *MA 3101 Applied Composition V*

Further development of techniques used in fine art composition. Creation of medium length compositions in various media.

MA 3301 **Applied Music V** **2 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 3302 **Applied Music VI** **2 Credits**
Prerequisite: *MA 3301 Applied Music V*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 3501 **Flamenco Techniques** **2 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Practical Flamenco guitar techniques with emphasis on the elementary chord progressions and techniques used in Flamenco. Basic chording for Bulerias, Soleares, Alegrias, Sevillanas, Farruca, Tientos, Tangos, Rumba, Zambra, Guajiras, and Garrotin.

MA 3801 **Contemporary Music Ensemble I** **1 Credit**
Prerequisite: *MA 1302 Applied Music II*

Instrumental/vocal ensembles with focus on contemporary fine art music.

MA 3901 **Baroque Music Ensemble I** **1 Credit**
Prerequisite: *MA 1302 Applied Music II*

Instrumental/vocal ensembles with focus on the performance of Baroque music.

MA 4101 **Applied Composition VII** **2 Credits**
Prerequisite: *MA 3102 Applied Composition VI*

Further development of techniques used in fine art composition. Creation of medium length compositions in various media.

MA 4102 **Applied Composition VIII** **2 Credits**
Prerequisite: *MA 4101 Applied Composition VII*

Further development of techniques used in fine art composition. Creation of medium length compositions in various media.

MA 4301 **Applied Music VII** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 4302 **Applied Music VIII** **2 Credits**
Prerequisite: *MA 4301 Applied Music VII*

Further development of performance techniques and interpretation of fine art music, based on student's selection of instrument and improvement from the previous course.

MA 4311 **Advanced Performance I** **2 Credits**
Prerequisite: *MA 3302 Applied Music VI*

Further development of performance techniques and interpretation of fine art music.

MA 4312 **Advanced Performance II** **2 Credits**
Prerequisite: *MA 4311 Advanced Performance I*

Further development of performance techniques and interpretation of fine art music.

MB 2421 **Music Production Technology** **3 Credits**

Aural training in various musical genres, styles, periods and from different regions, psycho acoustics, sound and acoustic fundamentals, analog and digital recording, music production process, digital audio workstation and music software, sound signature, and music pre-production, production, and post-production overview.

MB 2521 **Music Business I** **3 Credits**
Prerequisite: *Sophomore year standing*

Survey of the music industry, highlighting those areas where music and business intersect, career paths in the music industry, development of business-related knowledge and skills necessary for effectively maintaining a professional music career, vocabulary and terminology of the music industry, and the distinction between music and business at the corporate level.

MB 2522 **Music Business II** **3 Credits**
Prerequisite: *MB 2521 Music Business I*

Introduction to economic essentials, analysis of financial documents, planning the budgeting and executing from individual performance to big concert production, accounting practices, promotion, sponsorship, settlement, and case studies of successful/non-successful manager and management companies in music industry.

MB 3421 **Music Business Technology** **3 Credits**
Prerequisite: *MB 2421 Music Production Technology*

Overview of music industry, history of music publication, digital music, music production analysis, analog and digital audio formats, convergence of music/business/technology, SEO—Search Engine Optimization.

MB 3423 **Sound Design and Sound Logo** **3 Credits**
Prerequisite: *MB 3421 Music Business Technology*

Introduction to sound design in business, sound effects, value-added sound, branding, direction and synergy of sound, sound and social responsibility, importance of sound design.

MB 3512 **Legal Aspects of Music Business** **3 Credits**
Prerequisite: *MB 2522 Music Business II*

Legal issues confronting music business: with artists, musicians, engineers, and producers, legal changes and challenges, real approach to legal matters and individuals' working procedure in the music business world today and national and international copyright law.

MB 3513 **Local Internship in Music Industry (240 hours)** **3 Credits**
Prerequisite: *MB 2522 Music Business II*

Internship in a company in the music industry for at least 240 hours.

MB 4511 **Music Business Artist/Project Management** **3 Credits**
Prerequisite: *MB 2522 Music Business II*

Personal and business issues relating to the management of music artists/projects, negotiating contracts, image, career development, agents, touring, merchandising, fees, duties and taxes.

MB 4512 **Music in Film Industry** **3 Credits**
Prerequisite: *MB 2522 Music Business II*

History of cinema, film scoring, sound effects, history and development of incorporating sound into films, specific roles of the music industry in relation to film and broadcast media.

MB 4514 **Career Options in Music Business** **3 Credits**

Preparation for students for internship, career path in the music industry and in-depth study of potential careers in the music industry.

MB 4521 **Selected Topics in Music Business I** **1 Credit**
Prerequisite: *MB 4511 Music Business Artist/Project Management*

Individual project on a topic or area of interest in the Music Industry.

MB 4522 **Selected Topics in Music Business II** **2 Credits**
Prerequisite: *MB 4521 Selected Topics in Music Business I*

Implementation of the project and business plan written into practicum and execution.

MB 4523 **Music Business Seminar** **2 Credits**
Prerequisite: *MB 4521 Selected Topics in Music Industry I*

Selected issues in music business based on individual interest, research in the field of music business with content to be developed through primary research, visits to various businesses and personal interviews.

MC 2211 **History of Music Notation** **2 Credits**
Prerequisite: *MU 1112 Theory of Western Music II*

Evolution of music notation. Tablature systems, Neumatic and Mensural notation. Elements of notation in traditional practice and modern usage. Idiomatic notation. Manuscript techniques. Music terminology.

MC 2242 **Opera Staging** **2 Credits**

History of opera from its birth in the late Renaissance, its development in the 17th century, and contemporary opera. Form and structure in opera, relations between text and music, the world of singers and the characters they portray, historic study of the operatic orchestra with emphasis on notions of opera production: staging, sets, costumes and major opera houses throughout the world.

MC 2301 **Accompaniment I** **2 Credits**
Prerequisite: *MA 1302 Applied Music II*

Discussion and implementation of techniques for accompanying a vocalist or instrumentalist. Use of stylistically appropriate rhythm and voicing techniques in a supportive role. Introductions, endings, modulations, and transposition.

MC 2302 **Accompaniment II** **2 Credits**
Prerequisite: *MC 2301 Accompaniment I*

A continuation from Accompaniment I. Discussion and implementation of techniques for accompanying a vocalist or instrumentalist. Use of stylistically appropriate rhythm and voicing techniques in a supportive role: introductions, endings, modulations, and transposition.

MC 2511 **Vocal Diction I** **1 Credit**

Principles of accurate pronunciation in specified languages. Basic skills in International Phonetic Alphabet (IPA) and Italian diction. Students must take the sequence in chronological order and must study private voice during each semester.

MC 2512 **Vocal Diction II** **1 Credit**
Prerequisite: *MC 2511 Vocal Diction I*

Principles of accurate pronunciation in Latin and English. Students must take the sequence in chronological order and must study private voice during each semester.

MC 3201 **Keyboard Literature I** **3 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Historical survey of the contributive elements, stylistic characteristics, form and keyboard (Organ, Harpsichord, Piano) techniques from the 16th century to the 20th century. History of the development of the keyboard and its literature, including music written for early keyboard instruments.

MC 3202 **Keyboard Literature II** **3 Credits**
Prerequisite: *MC 3201 Keyboard Literature I*

A continuation of Keyboard Literature I. Examination of style and structure and their impact on performance. Chamber music, concerti, and solo keyboard literature with emphasis on the 19th and the 20th century repertory.

MC 3221 **Guitar Literature I** **3 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Historical survey of the contributive elements, stylistic characteristics, instruments and techniques from the 16th century to the 20th century. History of the development of the guitar and its literature.

MC 3222 **Guitar Literature II** **3 Credits**
Prerequisite: *MC 3221 Guitar Literature I*

A continuation of Guitar Literature I. Examination of style and structure and their impact on performance. Chamber music with guitar and solo guitar literature with emphasis on the 19th and the 20th century repertory.

MC 3231 **Lute Literature I** **3 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Historical survey of the contributive elements, stylistic characteristics, instruments and techniques from the Middle-Age to the late Baroque period. History of the development of the lute and its literature.

MC 3232 **Lute Literature II** **3 Credits**
Prerequisite: *MC 3231 Lute Literature I*

A continuation of Lute Literature I. Style and structure and their impact on performance. Chamber music with lute and solo literature with emphasis on the 16th century repertory.

MC 3241 **Vocal Literature** **3 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Survey of standard vocal repertoire from the High Baroque to the present with emphasis on stylistic and interpretive traits, pedagogical issues and repertoire selection, major composers and representative works.

MC 3242 **Opera Literature** **3 Credits**
Prerequisite: *MC 2242 Opera Staging*

Development of opera from its beginning to the present with emphasis on stylistic and interpretive traits, pedagogical issues and repertoire selection, major composers and representative works.

MC 3301 **Junior Recital** **2 Credits**
Prerequisite: *MA 3301 Applied Music V*

Providing opportunity for students majoring in applied music to demonstrate their ability and perform in a variety of musical style and period. Students must give at least a 30-45 minute recital.

MC 3511 **Introduction to Basso Continuo** **2 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Basic principles and technique of continuo playing. Harmonization of a melody placed in the bass line playing a four-voice score. Triads in root position, first and second inversion and their use in basso continuo practice.

MC 3512 **Advanced Basso Continuo** **2 Credits**
Prerequisite: *MC 3511 Introduction to Basso Continuo*

Advanced principles and techniques of continuo playing. Seventh, ninth, and suspensions. Different accompaniments for instruments and singers, from one or two soloists up to the orchestra.

MC 3513 **Vocal Diction III** **1 Credit**
Prerequisite: *MC 2512 Vocal Diction II*

Principles of accurate pronunciation in German. Students must take the sequence in chronological order and must study private voice during each semester.

MC 3514 **Vocal Diction IV** **1 Credit**
Prerequisite: *MC 3513 Vocal Diction III*

Principles of accurate pronunciation in French. Students must take the sequence in chronological order and must study private voice during each semester.

MC 4212 **Lute Tablature** **2 Credits**
Prerequisite: *MA 2302 Applied Music IV*

Detailed analysis of the lute tablature systems: Italian, French, German and Spanish tablature. Different tunings of Renaissance lute, archlute, theorbo and Baroque lute, how to transcribe tablatures in modern notation, and how to adapt it for the guitar with emphasis on the 16th and the 17th century repertory.

MC 4301 **Senior Recital** **4 Credits**
Prerequisite: *MA 4301 Applied Music VII*

Presentation of a 60-minute recital demonstrating the ability to perform in a variety of musical styles and periods.

MC 4302 **Recital for Composition** **4 Credits**
Prerequisite: *MA 4101 Applied Composition VII*

Scheduling, promoting, rehearsing and executing a recital of original compositions. Works may be acoustic, electronic or multimedia. Recital duration should be at least 45 minutes.

MC 4710 **Piano Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Introduction to basic pedagogical principles, general designs of materials for beginning pianists, various aspects of the piano teaching profession including the study of repertoires, examination and evaluation of teaching methods, techniques for all levels.

MC 4711 **Harpsichord Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Analysis of stylistic and musical aspects of harpsichord music by the educational point of view. Correct approach towards ancient music and to historical informed practice. Most important composers, their treatises and their innovation in performance technique, especially compared with other keyboard instruments. Appreciation of Basso Continuo like a way to understand and learn harmony.

MC 4712 **Guitar Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Historical and contemporary materials and techniques. Survey of guitar pedagogy.

MC 4713 **Lute Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Historical and contemporary materials and techniques. Survey of Lute pedagogy.

MC 4714 **Vocal Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Foundation areas of pedagogy in voice, addressing the nature of sound, posture, breathing and support, phonation, registration, voice classification, resonation, articulation, the speaking voice and coordination.

MC 4715 **String Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Basic information concerning appropriate teaching method, teaching strategy, technique development, physiology, performance practice, repertoire and instructional materials for string instrument. History and evolution of string instrument.

MC 4716 **Percussion Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Basic information concerning appropriate teaching method, teaching strategy, technique development, physiology, performance practice, repertoire and instructional materials for percussion instrument. History and evolution of percussion instrument.

MC 4717 **Woodwind Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Basic information concerning appropriate teaching method, teaching strategy, technique development, physiology, performance practice, repertoire and instructional materials for woodwind instrument. History and evolution of woodwind instrument.

MC 4718 **Brass Pedagogy** **2 Credits**
Prerequisite: *MA 3302 Applied Composition VI*

Basic information concerning appropriate teaching method, teaching strategy, technique development, physiology, performance practice, repertoire and instructional materials for brass instrument. History and evolution of brass instrument.

MCE 2101 **Fundamentals of Mechatronics Engineering** **3 Credits**
Prerequisite: *BG 1213 Physics II*

Introduction to Mechatronics and the interaction between mechanical actuation and electronic control, early design evolution, evolution of engineering design, using of sensors in the system, case studies: simple subsystem integration; modern technologies, control, sensors, power supplies and controlled drives, Programmable Logic Control (PLC) as a controller for Mechatronics system, The need for a systems approach to Engineering Design, Control and Embedded Intelligence or PLC.

MCE 2102 **Mechatronics Engineering Laboratory I** **1 Credit**
Prerequisite or Co-requisite: *MCE 2101 Fundamentals of Mechatronics Engineering*

Experiments covering basic sensors such as inductive, capacitive, magnetic, photoelectric and ultra sonic. Programmable Logic Controllers is introduced and experimental covering Ladder (LD), Structure Text (ST), Function Block Diagram (FBD) and Sequential Flow Chart (SFC) languages.

MCE 4101 **Introduction to Robotics** **3 Credits**
Prerequisite: *ME 3120 Mechanics of Machinery*

Introduction to Robotic systems, spatial descriptions, Kinematics, Jacobians, Robot dynamics, Trajectory generation, Position and force control, Image processing and analysis.

MCE 4102 **Introduction to Industrial Automation** **3 Credits**
Prerequisite: *CE 2704 Digital Logic Design*

PLC; instrumentation, sensors and actuators in manufacturing automation; signal conditioning; computer-based control system.

MCE 4103 **Mechatronics Engineering Laboratory II** **1 Credit**
Prerequisite or Co-requisite: *MCE 4102 Introduction to Industrial Automation*

Experiments covering modular Mechatronics system (mMs). In these stations, PLC is used to control the sequential operation including sensors and actuators. Control methods: On-Off, Three-modes, P, PI, PID are studies along with temperature process control experiment.

MCE 4801 **Instrument for Aviation** **6 Credits**
Prerequisite: *With the consent of the Instructor*

Principles of instruments, applications of instruments in aviation, IFR flight considerations, IFR flight environment, flight rules and regulations, human factors.

MCE 4901 **Mechatronics Engineering Project I** **1 Credit**
Prerequisite: *Senior Standing*

Study and development in mechatronics engineering. Students must be submit reports at the end of the semester.

MCE 4902 **Mechatronics Engineering Project II** **2 Credits**
Prerequisite: *MCE 4901 Mechatronics Engineering Project I*

Continuation of work done in mechatronics Engineering Project I. Report is also required at the end of the semester.

MCE 4903 **Advanced topics in Mechatronics Engineering** **3 Credits**

Advanced topics in the field of Mechatronics Engineering

MCE 4904 **Special Problems in Mechatronics Engineering** **3 Credits**

Topics of current interest in the field of Mechatronics Engineering

ME 1112 **Engineering Laboratory** **2 Credits**

Simple machine tools, electrical wiring and transformer winding, practice of basic electrical measuring instruments and basic electrical devices assembly with circuits diagrams. A full report of each job is required.

ME 1113 **Engineering Drawing** **3 Credits**

Lettering, orthographic projection, orthographic drawing and pictorial drawings, dimensioning and tolerancing, sections, auxiliary views and development; freehand sketches, detail and assembly drawings, basic computer-aided drawing.

ME 2211 **Engineering Mechanics I** **3 Credits**
Prerequisite: *BG 1211 Physics I*

Force systems, resultant, equilibrium, fluid statics, kinematics and kinetics of particles and rigid bodies, Newton's second law of motion, work and energy, impulse and momentum.

ME 2220 **Engineering Mechanics II** **3 Credits**
Prerequisite: *ME 2211 Engineering Mechanics I*

Structure Analysis; Principle of virtual work; Stability; Kinematics of Rigid Body; Plane motion of rigid bodies (Forces and accelerations, Energy and Momentum method); Mechanical vibrations

ME 3110 **Mechanics of Materials** **3 Credits**
Prerequisite: *ME 2121 Engineering Dynamics*
or *ME 2220 Engineering Mechanics II*

Forces and stresses; stresses and strains relationship; stresses in beams, shear force and bending moment diagrams; deflection of beams, torsion; buckling of columns; Mohr's circle and combined stresses; failure criterion.

ME 3120 **Mechanics of Machinery** **3 Credits**
Prerequisite: *ME 2121 Engineering Dynamics*
or *ME 2220 Engineering Mechanics II*

Velocity and acceleration analysis; kinematics and dynamics force analysis of mechanical devices, linkages, gear trains and mechanical systems; balancing of rotating and reciprocating mass.

ME 3310 **Thermofluids** **3 Credits**
Prerequisites: *BG 1205 Calculus II*
BG 1213 Physics II

Workdone, energy, power, unit, system, state, and field processes, compressible flows, mass conservation systems, properties of fluids, state equation, first law of thermodynamics, non-flow systems, energy equation, Bernoulli equation, linear and polar momentum equation, ideal flow.

ME 3311 **Pneumatic and Hydraulic Systems** **3 Credits**
Prerequisite: *ME 2121 Engineering Dynamics*
or *ME 2220 Engineering Mechanics II*

Fundamentals of Fluid Mechanics, fluid properties, Pascal's law, flow governing equations (continuity equation, conservation of energy or Bernoulli's equation, Torricelli's equation), basic flow in pipes, pumps, pipe design and selection, hydraulics design and analysis, pneumatic systems, compressors, receivers, valves, flow through orifices.

ME 3312 **Pneumatic and Hydraulic Systems Laboratory** **1 Credit**
Prerequisite or Co-requisite: *ME 3311 Pneumatic and Hydraulic Systems*

Laboratory works to be done according to ME 3311 Pneumatic and Hydraulic Systems.

ME 4010 **Machine Analysis and Design** **3 Credits**
Prerequisite: *ME 1113 Engineering Drawing*
ME 3120 Mechanics of Machinery

Fundamental of mechanical design; properties of materials, theories of failure; design of simple machine elements, rivets, screw fasteners, keys and pins, shafts, springs, power screws, coupling etc.; design project.

ME 4310 **Mechanical Vibration** **3 Credits**
Prerequisite: *ME 2121 Engineering Dynamics*
or *ME 2220 Engineering Mechanics II*

System with one degree of freedom; torsional vibration, free and forced vibration, method of equivalent system, systems having several degrees of freedom; methods and techniques to reduce and control vibration.

ME 4410 **Thermodynamics** **3 Credits**
Prerequisite: *BG 1213 Physics II*
BG 1108 General Chemistry

First Law of thermodynamics; Second law of Thermo dynamics and Carnot cycle, energy: entropy; basic heat transfer and energy conversion.

ME 4411 **Heat Transfer** **3 Credits**
Prerequisite: *ME 4410 Thermodynamics*

Modes of heat transfer, thermal conductivity; heat conduction equation, steady- state, one-and two-dimensional wave equation, unsteady- state heat conduction, radiation, fundamentals of convection heat transfer.

ME 4412 **Internal Combustion Engines** **3 Credits**
Prerequisite: *ME 4410 Thermodynamics*

Internal combustion engine fundamentals, spark-ignition and compression-ignition engines, fuels and combustion, ignition systems, ideal fuel air cycle, supercharging and scavenging, performance and testing, lubrication.

MGT 1101 **Introduction to Business** **3 Credits**

General introduction to business, philosophy, objectives and responsibility of business enterprises, business vocabulary, business and its environment emphasizing fundamental principles of organization, legal forms of business ownership, business activities concerning personnel, accounting, marketing, production and finance.

MGT 2404 **Managerial Psychology** **3 Credits**

Concepts and scope of social psychology, basic psychological factors and how they relate to business organization, language symbol, perception, memory, emotion, social attitudes, persuasion, social and cultural environment, role and status, personality, leadership, group behavior, morale and application of these factors in the human relation of business, especially in creation of morale, motivation of workers, and solutions of business and social problems.

MGT 2900 **Principles of Management** **3 Credits**
Prerequisite: *MGT 1101 Introduction to Business*

Principles of management: planning, organizing, leading and controlling, theory of management as applied to modern corporate structure, management policies, departmentalization, centralization and decentralization, line and staff functions, and human resources management.

MGT 3801 **Modern Office Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Different phases of office management, application of modern concepts of office management organization, operation, nature of the office work, office layout, office personal, planning and control of office work, productivity measurement and cost control.

MGT 3901 **Organization Theory** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Theories, practice and problems of organization and its environment, function and structure of authority and responsibility, formal and informal organization and social system, organizational behavior, organizational control, research and development, changing of corporate structure.

MGT 3903 **Leadership** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Types of leaderships and recognition of the problems faced by leaders in various work situations, role of the first-line supervisor and his subordinate, exploration of theories of worker motivation and their application, nature and character of influential leaders.

MGT 3905 **Operations Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Fundamentals of industrial management from the point of view of organization structure, product, product development and research, standardization, plant location and layout, materials handling, machines equipment and maintenance, and overall operation of production and control.

MGT 3907 **Business Communication** **3 Credits**
Prerequisite: *BG 2001 English IV*

Patterns of communication in business in both theories and practices of the business professional, business letters, essays and reporting, memoranda, conversation interviewing, presentation advertising and public relations, reading and listening techniques, electronic mail, videoconferencing, decision support systems, collaborative writing systems, group scheduling systems, and Internet-based communications

MGT 3915 **Project Management** **3 Credits**
Prerequisite: *MGT 3905 Operation Management*

Project planning procedure by considering factors in determining project objectives, setting of work system, allocation of resources, project feasibility analysis, matrix model organization, management techniques and operation procedures in accomplishing goal such as implementation, communication, coordination, controlling and evaluation of project.

MGT 3917 **Innovation and Change Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Concepts of innovation and change management, innovation as a management process with external linkages, role of innovation and how to manage innovation within firms, new product and services development as part of innovation.

MGT 3918 **Sport Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Operation of professional sports, collegiate athletics, and recreational organizations and enterprises, basic organizational structures found in the sports industry, managerial concepts and processes, skills that are necessary for the successful administration of these organizations.

MGT 3922 **Introduction to New Venture** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

New venture formation, how to launch a new business venture, how to get ideas to reality, and how to develop strategy.

MGT 3923 **Strategic Human Resources Management** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Phases of human resource management functions including selection, training, compensation, promotion and transfer, health and safety provisions, morale building, job stabilization, grievance handling and disciplinary actions, and human relations aspect of dealing with personnel.

MGT 3924 **Human Resources Development** **3 Credits**
Prerequisite: *MGT 3923 Strategic Human Resources Management*

Principles of training and development of personnel; types, methods, and contents of training programs, development of the programs, evaluation of training program, behavioral changes, and training for different levels of personnel and leadership training.

MGT 3928 **Management for Growth and Sustainability** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*

Concepts of sustainable value to create business sustainability through investment strategies, market insight, operational excellence, sustainable development and sustainability principles which are used as drivers for innovation, collaboration, and transformation.

MGT 3940 **Business Research Methodology** **3 Credits**
Prerequisite: *BG 2200 Statistics II*
BIS 3340 Computer Tools in Research

Scientific research methods for business decision-making and problem-solving with emphasis on nature of research, choosing a problem and scope for research in business administration, planning and organizing research project, methodology and techniques in data collection, design of research project, processing, analysis and presentation of data in appropriate report format

MGT 3942 **Organizational Behavior** **3 Credits**
Prerequisite: *MGT 2900 Principles of Management*
MGT 2404 Managerial Psychology

Elements of individuals and group behaviors in organization for improving effective communications, conflict management, motivation, coordination, dynamics of change, leadership, and stress management.

MGT 3945 **Managerial Decision Modeling** **3 Credits**
Prerequisite: *BG 2200 Statistics II*

Application of a quantitative analysis modeling to decision-making in a complex and dynamic business environment for organizational efficiency and effectiveness, managerial decision problems in management, marketing, operations, and finance.

MGT 4501 **Wealth Management** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance*

Management of personal investment, financial planning, portfolio management, and property and tax planning for efficient wealth management.

MGT 4806 **Management Internship (240 Hours)** **3 Credits**
Prerequisite: *Management Major: Concentration Entrepreneurial Management*

Student will be assigned to work in organization in the area of management related projects under the direction of a faculty supervisor. Faculty provides oversight of individual field experience with classroom debriefings and follow-up.

MGT 4909 **Communication in Management** **3 Credits**
Prerequisite: *MGT2900 Principles of Management*

Application of the general communication concept to business management system by studying of hindrance, communication problems affecting the management process and effectiveness, including approaches to solution of such problems relationship between communication system and other management ingredients such as decision-making, authority, responsibility, delegation, operation of organization, cooperation, coordination and conflicts with organization, including planning and controlling of communication systems for an optimal effectiveness in the management of organization.

MGT 4910 **Productivity and Quality Management** **3 Credits**
Prerequisite: *MGT 3905 Operations Management*

Philosophy, principles and practices of productivity and quality management, concepts, tools, techniques and systems associated with productivity and quality including Quality Circle, TQM, ISO, Benchmarking and Six Sigma.

MGT 4911 **Seminar in Management** **3 Credits**
Prerequisite: *Senior standing*

Application and Integration of knowledge and theories from various management levels: human resource management, entrepreneurial management and research through case studies, seminars and guest lectures.

MGT 4912 **Individual Research** **3 Credits**
Prerequisite: *Senior Standing (Management Major)*

Developing in students the ability to apply a theoretical concept to the real world problems of any organization in a selected industry in Thailand. Any specific area of concentration will be chosen by the student upon agreement with an instructor the faculty members of Management Department. A typewritten report must be submitted.

MGT 4914 **Entrepreneurship** **3 Credits**
Prerequisites: *MKT 2280 Principles of Marketing*
FIN 3701 Corporate Finance
MGT 3940 Business Research Methodology
MGT 3905 Operations Management
Senior standing 112 credits (for marketing students)

Principles, theories and practical aspects of entrepreneurship, pre-start-up, start-up and early growth of new venture, writing business plan and making existing enterprises profitable

MGT 4916 **Negotiation Strategy** **3 Credits**
Prerequisites: *MGT 2404 Managerial Psychology*
MGT 2900 Principles of Management

Principles and practice of domestic and international negotiations, for example in the fields of political, management, marketing and financial negotiations, impact of verbal and non-verbal communications upon negotiating process, development of skills in managing conflict resolutions within organization, the way to manage negotiating process and to handle the hard bargainer.

MGT 4926 **Compensation and Performance Management** **3 Credits**
Prerequisite: *MGT 3923 Strategic Human Resources Management*

Concepts of compensation management within the wider context of human resource management, reward management process which includes pay survey, job evaluation, and
design of pay structure, problems related to performance management system and suggestions for improvement.

MGT 4927 **Human Resources Planning** **3 Credits**
Prerequisite: *MGT 3923 Strategic Human Resources Management*

Human resources functions, evaluation and identification of human resources requirements for meeting organizational goals.

MGT 4928 **Employment Relations and Labor Law** **3 Credits**
Prerequisite: *MGT 3923 Strategic Human Resources Management*

Labor relations and collective bargaining which covers both union and management, legal framework, union structure and administration, employer role, union organizing, bargaining issues, negotiation process, grievances and arbitration, and public sector labor relations.

MGT 4943 **Organizational Development** **3 Credits**
Prerequisite: *MGT 3923 Strategic Human Resources Management*

Concepts for developing organizations, determining the direction for organization development, stages of organization development work, strategies and tactics of organization, development.

MGT 4945 **Cooperative Education (720 Hours)** **9 Credits**
Prerequisites: *Completion of 109 credits*
Cumulative GPA at least 2:00
Approval of the cooperative education director and CE advisor

Each student is required to show proof of work as a temporary employee with a private company for one-semester (approximately 4 months). The selected company must be approved by the cooperative education center. After the completion of the 4- month internship, students are required to submit a report on the cooperative education to the CE advisor and attend a seminar for report presentation and discussion.

MGT 4946 **Human Resources Management Internship (240 Hours)** **3 Credits**
Prerequisite: *Management Major: Concentration: Strategic Human Resources Management*

Student will be assigned to work in organization in the area of human resource management related projects under the direction of a faculty supervisor. Faculty provides oversight of individual field experience with classroom debriefings and follow-up.

MGT 4951 **Strategic Management** **3 Credits**
Prerequisite: *FIN 3701 Corporate Finance and senior standing*

Integration of the student's background, experiences, and previous core business curriculum through case studies and business decision simulation exercises; development of an effective conceptual approach to integrating administrative policy, strategies, and decision-making; diagnosis, analysis, and solution of interrelated administrative problems.

MKT 2280 **Principles of Marketing** **3 Credits**
Prerequisite: *MGT 1101 Introduction to Business*

Principles and problems involved in transfer of goods and services from producer to consumer, consumer's buying motives, basic product, distribution, price, promotion mix strategies, and improvement of marketing efficiency.

MKT 3102 **Integrated Marketing Communications** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Strategic use of various marketing communication elements including advertising, sales promotion, public relations, personal selling, event sponsorships and direct marketing to build and maintain brand equity, selection of alternative promotional tools, budgeting and allocation decisions, determining appropriate message strategy, developing media schedules for a given product/market, ethical principles in marketing communications, and effective integration of elements across promotional mix.

MKT 3515 **Purchasing and Supply Chain Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Scope and objective of negotiation in procurement, participation and relationship of functional elements of organization of purchasing department, preparation, conduct and recording of negotiations, analysis of sources of supply, contract cost, price, profit, investment and risk, cost principles, techniques of negotiation, make or buy, and transportation service.

MKT 3525 **Sales Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Management of personal selling process in marketing, types of sales organizations and their relations with other departments of the business, place of sales research and planning in marketing, selection of selling methods, credit, collection and sales financing hiring, training, compensating and supervising of salesman.

MKT 3530 **Consumer Behavior** **3 Credits**
Prerequisites: *MKT 2280 Principles of Marketing and MGT 2404 Managerial Psychology*

Nature and determinants of consumer behavior, influence of socio psychological factors such as personality, social groups, demographic variables, social class, and culture on the formation of consumers' attitudes, consumption and purchasing behavior, steps in decision-making process starting from problem identification, information and fact finding, evaluation of alternatives, buying decision, and after-purchase evaluation.

MKT 3620 **Global Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Principles and operations of international and global marketing concepts, international marketing environment, trade promotion activities of government and private agencies, environmental aspects of international market, financial features and instruments, marketing structure of international trade, terms of trade and credit, international marketing position, foreign market survey, segmentation, targeting and positioning, global market entry strategies, strategic elements of competitive advantage, global marketing mix including product decisions, pricing, channels of distribution, and global marketing communication mixes.

MKT 3627 **Sales Promotion** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Principles and practices in guiding management in making the key decisions necessary in sales promotion program selection of the proper sales appeals, sales promotion directed towards company's sales staff, middlemen and ultimate consumers, planning and evaluation of promotional activities, including the merchandising functions.

MKT 3628 **Public Relations** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Public relations process and job skills of public relations professionals, role of public relations organizations and role of public relations in organizations, promotional campaigns in which public relations plays a key element, techniques and tools used in the field of public relations.

MKT 3629 **Pricing Strategy and Decision** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Strategic pricing concept, cost structure, market-based pricing for profit, pricing influence on purchase decision, role of value in pricing, price sensitivity analysis, price elasticity, competitive pricing, proactive pricing, initial launch of integration of elements in profitable pricing, pricing for new products and different pricing schemes by segments, product-line pricing, pricing as a promotional tool, pricing to leverage competitive advantages, pricing psychology, and pricing ethics.

MKT 3803 **Retail Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Principles and practices of small business in the area of retail operations, planning, operations and control in various retailing institutions, retailing opportunities and careers with major emphasis on the need to adopt decisions on store location, layout, building, fixtures, equipment and merchandise management, buying, handing, control and pricing, store promotion and customer services.

MKT 3804 **Fashion Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Foundation of marketing, its techniques and activities in the fashion industry, fashion marketing environment, fashion marketing mix, branding, visual merchandising, how to develop, analyze and implement brand strategies, buying and merchandising practices, how to plan and execute effective advertising and promotional strategies including public relations and event planning related to fashion products.

MKT 3823 **Marketing Channel Strategy and Decisions** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Distribution strategies, structure, functions, types, and operating problems of various institutions in the chain of distribution of different types of products and industries, segmentation for marketing channel design, channel strategy formulation and implementation, scope of distribution strategies including distribution intensity and vertical constraints, and strategic alliances in distribution.

MKT 3830 **Direct Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Methods of direct marketing to consumers and businesses without using conventional retailers or sales forces, use of direct marketing techniques to enhance traditional marketing methods, scope of direct marketing, strategic planning, planning and positioning database management, direct mail, telemarketing, catalogs, direct response advertising, and marketing applications and concepts.

MKT 3836 **Merchandising and Promotion** **3 Credits**
Prerequisites: *MKT 2280 Principles of Marketing*
MKT 3803 Retail Management
(For students who select plan A: Retail Entrepreneurship)

Duties and problems of store buyer, merchandise manager, demand forecasting, sources of buying information, buying policies and practices, selection and evaluation of resources, inventory planning and control, promotion strategies and tools used by retailers to achieve a multitude of objectives such as building store image, generating store traffic and immediate purchases, broad array of tools from the use of local advertising in broadcast and print media to in-store displays and product/ visual merchandising.

MKT 3837 **Service and Customer Relationship Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Service operations and all aspects of interaction a company has with its customers, including prospecting sales and service, identifying, acquiring, and retaining customers by enabling organizations to manage and coordinate customer interactions across multiple channels, departments, lines of business and geographies, how organizations use customers' database to maximize value of every customer interaction and drive superior performance.

MKT 3838 **Event Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Comprehensive coverage of events and sponsorship strategies, basic principles of motivation for participants and spectators, application of broad principles underlying why consumers attend events in a variety of context and situations, basic marketing, target marketing and segmentation, sponsorship, event marketing, promotions, sponsorship proposals, and implementation of marketing plans. Students will develop a customized sponsorship proposal on behalf of a designated event organization and selling techniques, and then deliver a sales presentation.

MKT 3840 **Digital Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Overview of practical marketing and communication applications for digital communication channels, especially the Internet and hi-technology devices, strategy and implementation of various digital formats to enhance the marketing of goods and services such as social media marketing, digital media, mobile, website, social networking, and search engine marketing with focus on evolving behavior of digital consumer and new digital opportunities, how to plan, buy, track, report and evaluate each digital marketing tool/device to solve current marketing problems, digital marketing terminology and metrics such as page view, unique visitor, dwelling time, and pay-per-performance.

MKT 4725 **Competitive Analysis and Strategy** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing and Completion of at least 90 credits*

Analytical concepts in competitive environment, efficient market functioning, industry analysis, strategic groups in industry and global competition, analysis of competitive advantage, vertical linkages, corporate diversification, competitive strategic alliances, rivalry using product positioning, competitive pricing, research and development in competitive environment

MKT 4726 **Advertising and Creative Strategy** **3 Credits**
Prerequisite: *MKT 3102 Integrated Marketing Communications*

Role of creative strategy in advertising and other promotional mix, examination and systematic development of creative brief or copy platform as a means of designing message strategies that evoke consistent value and identity, creative content and creative process beginning with market analysis and target market selection to brand attributes and value propositions to creative execution with emphasis on execution of the "big idea".

MKT 4727 **Integrated Media Planning** **3 Credits**
Prerequisites: *MKT 3102 Integrated Marketing Communications*
MKT 4726 Advertising and Creative Strategy

Nature of media, media business and media industry, roles of and relationships among media planners, buyers and sellers, characteristics of traditional, nontraditional and interactive media, general procedures in media planning, basic and advanced measurements in media analysis, evaluation and selection of media vehicles, strategic media plan (i.e. target audience selection, objective specification, media and vehicle selection, media buying), setting and allocating media budget, and media testing.

MKT 4730 **Marketing Management** **3 Credits**
Prerequisites: *MKT 2280 Principles of Marketing*
MGT 2900 Principles of Management
Senior standing (106 credits)

Scope and field of marketing management, need of marketing and product planning for promotion purpose, need of planning for new products to replace existing products, planning for new marketing techniques including pricing and pricing policies, techniques of market survey, its objectives and limitations, management of personal selling, coordination of advertising with all other aspects of marketing, development of policy toward changing items comprising product lines, and control of marketing operation.

MKT 4805 **Business-to-Business Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Marketing problems of manufacturers and distributors of industrial goods such as machinery and equipment, raw and semi-fabricated materials, industrial supplies and component parts, industrial marketing system and concepts, demand and product characteristics, product and service definitions, market identification, evaluation and measurement of marketing performance, pricing, promotion and public relations, industrial channel strategy and logistics, performance standards and instruments of control.

MKT 4806 **Product and Brand Management** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Management concepts concerning process of new product development including product concept, positioning, and branding used in developing product lines, pricing, distribution decisions in keeping up-to-date to both industrial and consumer goods, product line management, environment factors that have impacts on product, brand and price strategies.

MKT 4807 **Agricultural Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Nature and problems of marketing agricultural product with emphasis on Thai agricultural marketing, nature of Thai agricultural products and their marketing systems, survey of local and foreign agricultural marketing, environmental factors of agricultural markets, grading, storing and transporting products, promotional activities and policies of government and private agencies.

MKT 4808 **Advanced Marketing Presentation** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*
Senior standing over 90 credits

Skills of communication and presentation of selling, marketing planning, structuring and delivery of formal and informal presentations for productive outcomes, essential elements of good communication and presentation in marketing field, how to put these principles into practice in an interactive session and to deliver presentations in a more confident and professional manner.

MKT 4809 **Marketing for Services** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*
Senior standing over 90 credits

Nature and characteristics of market and consumer behavior for various services, marketing mix for services, structure and development of institutions involved in selling services such as financial institution, banks, insurance companies, transportation firms, hotels and various travel industry agencies, comparison between marketing for goods and marketing for services.

MKT 4810 **Export-Import Management** **3 Credits**
Prerequisite: *MKT 3620 Global Marketing*

Principles and practices of international marketing management, foreign market exploration, exchange problems, practices and document preparation, customs clearances and forwarding practices, customs tariffs, duties and export-import premiums, landed cost calculation methods, commodity classification system of the Customs department, carrier selection decision making, management and organization of freight forwarding and customs clearance agencies, marketing communication for foreign products, management and organization of import and export departments of large commercial firms, relationship with financial and transportation intermediaries

MKT 4811 **Seminar in Marketing** **3 Credits**
Prerequisites: *MKT 2280 Principles of Marketing*
MKT 4730 Marketing Management (for Marketing students)
Completion of at least 90 credits

Integration of experience in all areas of marketing to play on the problems encountered by case study analysis, guest lecturers from business field, research, and others.

MKT 4812 **Individual Research** **3 Credits**
Prerequisites: *MKT 3530 Consumer Behavior*
MGT 3940 Business Research Methodology
MKT 4855 Research in Marketing
Senior standing and Chairperson's approval

Application of theoretical concepts to real world problems of any organization in a selected industry in Thailand. Any specific area of concentration will be chosen by the student upon agreement with an instructor selected from the faculty members of Marketing Department.

MKT 4826 **Contemporary Logistics** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*

Modern logistics, application of analytical tools useful in logistics, analysis of characteristics of logistics system elements, inventory and warehouse management systems, modes of transportation, fundamentals of logistics in today's dynamic global landscape, value-added applications of logistics decision-making tools that lead to solid formulations of marketing and competitive advantages in the supply chain of a company.

MKT 4829 **Marketing Decision Making** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*
Senior standing (112 credits)

Principles, techniques and actual practices of marketing forecasting, demand analysis and evaluation of market potential with emphasis on market projection, sales budgeting, pricing, production and distribution scheduling as a part of administrative planning for profit, market campaign planning, execution and control.

MKT 4845 **IMC Research** **3 Credits**
Prerequisites: *MKT 3102 Integrated Marketing Communications*
MKT 3530 Consumer Behavior
MGT 3940 Business Research Methodology

Aspects of conducting marketing and communications research and presenting research findings, marketing communications research topics such as media effects research, advertising effectiveness research, audience and segmentation research and concept testing, research approaches such as qualitative research, content analysis, survey research, and experimental research.

MKT 4848 **Contemporary Issues in Marketing** **3 Credits**
Prerequisite: *MKT 2280 Principles of Marketing*
Completion of at least 90 credits

Current issues in marketing such as regional marketing strategies, viral marketing, ethical issues in marketing, and green marketing to create sustainability for business, recent marketing news in different sectors.

MKT 4849 **IMC Campaign Planning** **3 Credits**

Prerequisites: *MKT 4726 Advertising and Creative Strategy*
MKT 4727 Integrated Media Planning
Senior standing (106 credits)

Conceptual synthesis and practical application of business, research, media planning, and creative principles used in the formulation of persuasive messages, development of a complete integrated marketing communications (IMC) campaign for sales promotion, and both written and oral presentation of the campaign.

MKT 4855 **Research in Marketing** **3 Credits**

Prerequisites: *MKT 2280 Principles of Marketing*
MGT 3940 Business Research Methodology
Completion of at least 90 credits

Principles and methods of marketing research, securing respondents, making test investigation, sampling, collecting data, types and errors of collected data, tabulating and analyzing
information, interpreting findings and stating conclusion, application of research techniques and procedures to the solution of marketing problems: determination of market potential and sales quota, reduction of selling costs, forecasting and appraisal of sales promotional efforts, advertising program and channels of distribution.

MKT 4856 **Brand Building Strategy** **3 Credits**

Prerequisite: *MKT 3102 Integrated Marketing Communications*
Completion of at least 90 credits

Brand building and development, concepts, theories, principles and terminology of brand building strategy, brand equity, and integrated marketing communication tools, segmentation, target market identification, positioning, message strategy, media choice, advertising evaluation, aspects of raising brand awareness, creating relevant and distinctive brand identity, building high quality reputation, and shaping desired brand imagery for a brand and brand equity.

MKT 4857 **Qualitative Research in Marketing** **3 Credits**

Prerequisite: *MKT 4855 Research in Marketing*
Senior standing (106 credits)

Basic application of qualitative techniques in research including in-depth interviews, focus-group research and applicable psychological measurement techniques to understand the consumers' buying decision making, data collection and analysis through content analysis, discourse analysis and others.

MKT 4897 **Marketing Internship** **3 Credits**

Prerequisite: *MKT 2280 Principles of Marketing*
Completion of at least 90 credits

Opportunity for students to experience practical marketing by carrying out work project or full-time work in marketing firms, retail business corporations, governmental entities, private or public organizations under the direct supervision of a designated executive or faculty member. Students will apply theoretical concepts to practice and gain valuable working experience. All internships must be approved in advance.

MKT 4898 **Seminar in Entrepreneurship** **3 Credits**

Prerequisite: *MKT 2280 Principles of Marketing*
Senior standing (106 credits)

Starting and running of a business, legal organization of firm, branding, financing, franchising, location and site selection, employee management, buying and customer support functions, retail environment and application of new technologies, retail marketing mix components (such as branding, merchandising, pricing and margin planning, store management, layout and visual merchandising), internal and external promotions, traits and characteristics of successful entrepreneurs.

MKT 4899 **IMC Internship** **3 Credits**

Prerequisite: *MKT 3102 Integrated Marketing Communications*
Senior standing (106 credits) and Chairperson's approval

An off-campus training supervised work experience in the advertising and marketing communication organization. Regular meetings with the internship coordinator, periodic reports, as well as a final paper relating the work experience to the student's course work.

MT 2101 **Principles of Technology Management** **3 Credits**

Management of innovation, management of technology, management of technology transitions, complexities and challenges of changes in technology-based business.

MT 2102 **General Engineering System** **3 Credits**

Process of engineering design and solution, representation of technical information, engineering approximations and estimations, dimensions, units, conversion, engineering drawing, material balance, electrical theories, energy, and engineering economics.

MT 2103 **Introduction to Innovation Business** **3 Credits**

Source and nature of innovation, value of experiment, diffusion, new product development, market outcomes, and creative economy concept.

MT 2210 **Fundamentals of Financial Management in Technology Development** **3 Credits**

Principles of corporate finance, financial functions, capital market, financial analysis, investment appraisal methods, sources of long-term financing, cost of capital, capital structure, portfolio theory, working capital management, risk management, and feasibility study of a technology project.

MT 3210 **Human Resources in Technology Driven Enterprises** **3 Credits**

Key organizational behavior, business policy by staffing, reward system, and relationship between productivity, quality of work life and the role of technology in human development.

MT 3211 **Organization Behavior in Technology Driven Enterprises** **3 Credits**

Psychological foundation for understanding individual and organizational behavior, application of principles for managerial problems in technological driven organization, perception, attitudes, motivation, group dynamics, and organizational structure and culture.

MT 3212 **Economics for Sciences and Technology Policy** **3 Credits**

Economic viewpoints on issues of science and technology, clear picture of how economists approach policy-making within firm and inter-organizational levels, application of economic measures and public policies for science, technology, and innovation, economic development in relation to sustainability.

MT 3220 **Technological Marketing Management** **3 Credits**

Principles of marketing and integration of technology factors in market development, customer and market, marketing research, information and technology, development of product and service, product life cycle and marketing mix.

MT 3221 **Fundamentals of Communication Technology** **3 Credits**

Communication theories, data analysis, computer networks, communication devices, transmission media, network protocol and design, security system, and other related communication systems and networks.

MT 3230 **Production and Project Management** **3 Credits**

Production management, aspects of managing and controlling a variety of production functions from material management to production planning and scheduling with a balanced treatment of manufacturing and service aspects, project management techniques.

MT 3240 **Work Analysis and Operation Designs** **3 Credits**

Application of ergonomics and work design, utilization of time standard, production planning and control, productivity improvement, identification of suitable working condition, and wage incentive system.

MT 3310 **Global Business and Intellectual Property** **3 Credits**

Effective business management in global level, difference and similarity in macroeconomic factors, regional market conditions and culture that lead to decision of how to manage intellectual property management in business transaction at global setting, licensing technology issues.

MT 3311 **Leadership and Managerial Skill Development** **3 Credits**

Introduction to nature of leadership, managerial work and skills, perspectives on effective leadership behavior, theory of motivation, team building, managerial skill development, presentation, and negotiation skills.

MT 3312 **Quality Management** **3 Credits**

Concepts of quality management, quality movements, total quality approach, Six Sigma, ISO, JIT, quality culture, quality tools and techniques.

MT 3313 **Technical Communications** **3 Credits**

Effective technical communicators in a variety of technology fields, communication skills and communication process, technical writing, oral presentations on a wide range of audiences, principles and practice of interpersonal communication, and effective interaction within groups.

MT 3314 **Introduction to Supply Chain Management** **3 Credits**
Prerequisite: *MT 3230 Production and Project Management*

Global sourcing, supply chain design, logistics activities, sourcing process, operation, inventory, distribution network, and demand management.

MT 3315 **Consumer Behavior in Technology Business** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Nature of consumer buying behavior for technological products and services, influence of socio-psychological aspects such as personality, social group and class, demographic variables, and culture toward the technology consumption and purchasing behavior.

MT 3316 **Customer Relationship Management in Technology Business** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

CRM value chain, customer portfolio analysis, creating and managing networks, information technology for customer relationship management, managing the customer lifecycle: customer acquisition, and customer retention and development

MT 3317 **Introduction to Industrial Marketing** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Marketing concept of manufacturing and distribution of industrial goods such as machinery, equipment, raw material, semi-fabricated material, nature of industrial demand and product characteristics, engineering standard, is including industrial channel.

MT 3318 **Technology Retail Business** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Essential principles of technology business in area of retail operations, inventory planning, operations and control in the various consumer technology retail, location selection, store layout and design, sale equipment and customer service.

MT 3319 **Consumer Technology Product and Merchandise Management** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Relationship of fast changes in innovation product's model and reduction in retail price, practice of store procurement policy, merchandise management, demand forecasting, sourcing, inventory planning and control, retail profitability, and channel strategy.

MT 3320 **Organizational Development in Technology Enterprise** **3 Credits**
Prerequisite: *MT 3211 Organization Behavior in Technology Driven Enterprises*

Organizational requirement for incremental development in order to gain and sustain its competitive advantage under dynamic changing environments in technology business, and organizational development and transformation.

MT 3321 **Global Innovation and Technological Changes** **3 Credits**
Prerequisite: *MT 3211 Organization Behavior in Technology Driven Enterprises*

Global innovation and impact to society, concept of national innovation system (NIS) of the selected successful countries, linkages among the stakeholders and other technology related parties, highlight of successful technology lead growth countries and Newly Industrialized Economics (NIEs).

MT 3322 **Innovation Business** **3 Credits**
Prerequisite: *Required at least 100 Credits*

Process of developing new technologies, technical feasibility, innovation economic value, and process of potential commercialization.

MT 3340 **Principles of Business Research** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Formulation and clarification of research topics, review of literatures, research approach selection, selection of samples, data collection, qualitative analysis and quantitative data, and report writing.

MT 4201 **Social Interests, Government Policies, and Technology** **3 Credits**
Prerequisite: *Required at least 80 Credits*

Interrelationships among businesses, government, society, and technology and how they affect business decisions, how business leaders steer companies through a world continuously altered by environmental forces that reshape the economic, cultural, political, technological and ecological terrain in which companies operate, and how to operate a company with ethical and social responsibility.

MT 4210 **Technology Management and Business Strategy** **3 Credits**
Prerequisite: *Required at least 100 Credits*

All functional areas of business and technology policy for managing firm technological capacities in one whole, integration of technology and business policy, formulation of technology policy, invention of firm technological competencies, managerial problem solving skills, strategic decision making, position defense.

MT 4299 **Senior Project** **3 Credits**
Prerequisite: *Required at least 100 Credits*

Application of technology knowledge, problem analysis, research and proposed solutions in system design, application of technology management concepts, business development plan.

MT 4310 **International Marketing Management** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Systematic and integrative marketing planning for managing technological product or service in global level, practices of marketing mix, research, consumer behavior, distribution system, marketing information system, social and cultural difference.

MT 4311 **Technological Brand Management** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Successful technology brand products positioning, technology product marketing, technology diffusion, technology product retailing, technology product development, technology product life cycle, and market conditions.

MT 4313 **Management of Organization Transformation** **3 Credits**
Prerequisite: *MT 2101 Principles of Technology Management*

Analysis on how organizations make it through difficulty periods, development strategies, different approaches to organizational transformation, comparison of some of the basic strategies used in transforming organizations, a variety of theories and researches, conceptualization and integration of the theories.

MT 4314 **Marketing Communication for Technology Product** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Application of the communication theory in marketing practice in the area of technology field in both consumer and industrial market, market structure analysis, media practice, advertising, public relation and other integrated communication tools.

MT 4315 **Mobile Marketing and Technology** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

New emerging marketing concept through consumer mobility device such as mobile phone, fast changes in mobile device capability leading to the changes in market behavior due to consumer adoption of mobile technology, and media promotional contents.

MT 4316 **Financial Planning and Analysis** **3 Credits**
Prerequisite: *MT 2210 Fundamental of Financial Management in Technology Development*

Analysis of financial statement to assess profitability and productivity, interaction between macroeconomics and business resources, business plan and decision.

MT 4317 **Business Budgeting and Control** **3 Credits**
Prerequisite: *MT 2210 Fundamentals of Financial Management in Technology Development*

Method of arranging corporate budget for managerial planning and control, various types of budgeting such as cash budgeting, capital budgeting, R&D budgeting, production budgeting.

MT 4318 **Engineering Economics** **3 Credits**
Prerequisite: *MT 3212 Economics for Sciences and Technology Policy*

Application of economics tools for analysis of management decision, demand analysis, demand forecasting, production cost analysis, market structure and competitive analysis, valuation, and economic uncertainty conditions.

MT 4319 **Economics and Technology Development** **3 Credits**
Prerequisite: *MT 3212 Economics for Sciences and Technology Policy*

Application of economic principles in the development of new technology and market with emphasis on theoretical model used by innovator such as technology acceptance model.

MT 4320 **Principles and Policies of Technology Investment** **3 Credits**
Prerequisite: *MT 2210 Fundamentals of Financial Management in Technology Development*

Investment theories and practices in decision making and measuring strategy related to technology research and development, operation strategy, value creation to company profitability, growth and competitiveness under the consideration of financial and forecasting constraints.

MT 4321 **Product Design and Technology** **3 Credits**
Prerequisite: *MT 2102 General Engineering Systems*

Transfer of existing technologies with new commercial design ideas, process design, product development, electronics, mechanism and control, structure and material selection.

MT 4322 **Management of Technological Changes** **3 Credits**
Prerequisite: *MT 2101 Principles of Technology Management*

Systematic approach to change management in corporate performance due to the effect of emerging technologies, process and model such as innovation diffusion in S-curve growth model, disruptive technologies for systematic thinking, problem solving and managing the transition.

MT 4323 **Entrepreneurship in Technology Business** **3 Credits**
Prerequisite: *Required at least 100 Credits*

Practice of business plan, business model, new venture formation, feasibility, and valuation in order to capitalize the opportunities in technology business.

MT 4330 **Operation System and Technology** **3 Credits**
Prerequisite: *MT 3230 Production and Project Management*

Process management, management of technology in operation, capacity planning, location, layout, process flow, facility design, performance measurement and control system, industry management, and strategic operation decision.

MT 4360 **Computer Graphic and Application** **3 Credits**

Theory and practice of 2-D and 3-D computer graphic, storyboard writing, creation of commercial graphic artwork.

MT 4361 **Computer Arts and Graphic Design** **3 Credits**

Process of designing graphic design production, theory of art and design, theory of color, principles of composition, typo-graphic for the basic development of graphic design, image creation and retouching, page layout by using the program of Adobe Illustrator CS with other most popular graphic programs such as Adobe Photoshop CS, graphic design printing work.

MT 4362 **Web Design and Web Multimedia** **3 Credits**
Prerequisite: *MT 4361 Computer Arts and Graphic Design*

Process of web production, conception to web design implementation, concept making, graphic design, GIF animation, web page editing, domain name registration, server rental, transferring the web site to the Internet.

MT 4363 **Security Management in Information Technology** **3 Credits**
Prerequisite: *IT 2231 Introduction to Information Technology*

Adoption of IT security related to organization business objectives, business needs, business processes and structure of the organization, risk management process and IT auditing, development of business continuity plan and disaster recovery plan, process of acquisition, implementation and post-implementation of IT security, maintenance of business continuity, security training and knowledge management.

MT 4364 **Marketing Information System and Management** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Use of marketing information system for marketing communication, analysis of customer behavior database, information value from measurement of customer profitability, responsiveness of target customers to marketing communication effectiveness, design of system.

MT 4365 **Business Marketing Information System** **3 Credits**
Prerequisite: *MT 3220 Technological Marketing Management*

Integration of business marketing principles with information system management, organizational purchasing functions, buyer behavior, business marketing program and channel, business marketing database and information system.

MT 4366 **Logistic Technology and Operation** **3 Credits**

Global logistic operation, technologies toward logistic cost and performance.

MT 4367 **Principles of Enterprise Knowledge Management** **3 Credits**

Concept of knowledge and knowledge management life cycle, knowledge creation and capture, and the technical aspects of knowledge management tools.

MT 4368 **Technology Outsourcing** **3 Credits**

Outsourcing methodology , feasibility of outsourcing Ideas, outsourcing risk analysis, sourcing models, transition to outsourcing, managing ongoing outsourcing relationship, IT outsourcing lifecycle and transition phase, supplier's core capabilities and strategies for sustainability and growth, and governance of outsourcing projects.

MT 4369 **Technology Value Evaluation Methodology** **3 Credits**
Prerequisite: *Required at least 100 Credits and the consent of the instructor*

Contradiction of technology investment value, conflicting in technology investment payoff, value evaluation both return and risk, research study of the past technology initiative, and various approaches of evaluation methods.

MT 4370 **Engineering Statistics** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Introduction of statistics techniques, use of language, statistical tools, and computation techniques for analyzing and summarizing the data.

MT 4371 **Advanced Statistics for Research** **3 Credits**
Prerequisite: *DA 2103 Principles of Statistics*

Basic concepts of structural equation model, advanced statistics and use of statistical tools and computation techniques for analyzing and summarizing the complicated and multivariate data.

MT 4390 **Seminar in Management** **3 Credits**
Prerequisite: *The consent of the instructor*

Seminar in the advancement of management science or new researches that may affect modern management theory. The course may be conducted by experts in specialized areas from governmental or private sectors. Students may be organized into groups for special activities on interesting topics.

MT 4391 **Seminar in Technology** **3 Credits**
Prerequisite: *The consent of the instructor*

Seminar in the advancement of science and technology or new researches that may affect modern technology development theory. The course may be conducted by experts in specialized areas from governmental or private sectors. Students may be organized into groups for special activities on interesting topics.

MT 4400-49 **Selected Topic in Management** **3 Credits**
Prerequisite: *The consent of the instructor*

Special selected topics in management that the department and the instructors think appropriate for students to further study. The area of study depends on the interest of the instructor and the students and the topic can vary from one semester to another.

MT 4450-99 **Selected Topic in Technology** **3 Credits**
Prerequisite: *The consent of the instructor*

Special selected topics in science and technology that the department and the instructors think appropriate for students to further study. The area of study depends on the interest of the instructor and students and the topic can vary from one semester to another.

MU 0020 **Fundamentals of Music Theory** **Non-credit**

Basic concepts of music, notation, major and minor scales, key signatures, intervals and their inversions, tempo, rhythm, meter, division of the beat, simple and compound time signatures, triads, seventh chords, inversions and their symbols, and diatonic chords in major and minor keys.

MU 0101 **Ear Training I** **2 Credits**

Development of basic ear training skills through singing and dictation – songs, intervals, scales, chords, elementary harmonic motion and rhythmic patterns.

MU 0102 **Ear Training II** **2 Credits**
Prerequisite: *MU 0101 Ear Training I*

Further development of ear training skills through increasing complex singing and dictation exercises.

MU 0103 **Ear Training III** **2 Credits**
Prerequisite: *MU 0102 Ear Training II*

Further development of ear training skills through increasing complex singing and dictation exercises.

MU 0104 **Ear Training IV** **2 Credits**
Prerequisite: *MU 0103 Ear Training III*

Further development of ear training skills through increasing complex singing and dictation exercises.

MU 0111 **Ear Training I** **1 Credit**
Prerequisite: *Satisfaction score on theory entrance examination*
or *MU 0020 Fundamental of Music Theory*

Basic ear training, sight reading, singing on simple melodic line, intervals, chords, and scales in basic rhythm patterns.

MU 0112 **Ear Training II** **1 Credit**
Prerequisites: *MU 1111 Theory of Western Music I*
MU 0111 Ear Training I

Advanced ear training, sight reading, singing any music in written notation form precisely, dictation studies, intervals, chords layout-inversion, harmonic progression and rhythmic study in classical and contemporary music.

MU 1111 **Theory of Western Music I** **3 Credits**
Prerequisite: *Satisfaction score on theory entrance examination*

Jazz and Classic: Fundamentals of music (scales, keys, intervals, chords, rhythm and meter) with an introduction to basic musical form, cadences, non-chord tones, modes, dominant and diatonic seventh chords, instrumental transposition, diatonic harmonic function, part-writing, harmonization and score analysis.

MU 1112 **Theory of Western Music II** **3 Credits**
Prerequisites: *MU 1111 Theory of Western Music I*

Jazz: Major key harmony: secondary and extended dominant relationships, available tensions, melodic construction and motif development. Principles of linear harmonic continuity and guide tone lines. Minor key harmony; introduction to subdominant minor. Blues theory and chord progressions. Melodic rhythm, form, and melody/harmony relationship.
Classic: Chromatic harmonic function: secondary dominants, modulation, mode mixture and the Neapolitan chord. Further development of part-writing skills, harmonization and score analysis.

MU 1401 **Computer for Musicians** **3 Credits**

Introduction to the practice of music technology. Overview of all aspects of the previous and current technology with emphasis on preparing students to evaluate their own future technological needs.

MU 1701 **Jazz Music Appreciation** **3 Credits**

Jazz music through listening techniques to recognize various elements, styles, genres, forms, and textures. Understanding and appreciation of jazz through exposure to many famous performers and a wide variety of styles that are significant in its development.

MU 1702 **Popular Music Appreciation** **3 Credits**

Modern popular music through listening techniques to recognize various elements, styles, genres, forms, and textures. Understanding and appreciation of popular music through exposure to many famous performers. Survey of popular music styles: Blues, Rock, Pop, R&B, Funk, Latin, Rap, and all the latest forms of popular music.

MU 2101 **Orchestration** **3 Credits**
Prerequisite: *MU 1112 Theory of Western Music II*

Basic principles and techniques used in the arrangement and composition of music for the symphonic orchestra.

MU 2102 **Conducting** **2 Credits**
Prerequisite: *MU 1112 Theory of Western Music II*

Physical skills involved with conducting using the baton and hands. Methods of choral and instrumental conducting will be explored and practiced using members of the class as performers as well as existing musical ensembles.

MU 2113 **Theory of Western Music III** **3 Credits**
Prerequisites: *MU 1112 Theory of Western Music II*

Jazz: Analysis and application of major and minor key harmony; subdominant minor and modal interchange; chord scale theory. Review of melodic construction and melody/ harmony relationship; individual note analysis of melodies. Substitute dominant and related II-7 chords; diminished chord patterns; modulation.
Classic: Sixth chords, enharmonic functions, altered dominants, common-tone diminished seventh chords, chromatic mediants, coloristic chord successions and tonal harmony of the late 19th century. Further development of part-writing skills, harmonization and score analysis.

MU 2114 **Theory of Western Music IV** **3 Credits**
Prerequisite: *MU 2113 Theory of Western Music III*

Jazz: Principles of modern chord progression: deceptive resolutions of secondary dominants; dominant seventh chords without dominant function; contiguous dominant motion. Review of melodic construction, form, and melody/ harmony relationship; modal interchange; pedal point and ostinato; modal harmony and modal composition; compound chords.
Classic: Basic principles and techniques of 20th century art music: modes, artificial scales, free tertian and non-tertian harmony, polytonality, rhythmic methods, formal process, intervallic organization, serial procedures and an introduction to recent developments. Further development of score analysis skills and analytical skills required for non-tonal music.

MU 2211 **History of Thai Music** **3 Credits**

Development of early Thai musical genres up to the present, including historical background and political and cultural influences, growth of vocal and instrumental music, musical varieties and characteristics of human life, contributions of the Thai principal composers.

MU 2221 **Popular Music Literature** **3 Credits**
Prerequisites: *MU 1112 Theory of Western Music II*
MU 0112 Ear Training II

Survey of western popular music, popular music artists in different periods.

MU 2501 **Ensemble I** **2 Credits**
Prerequisite: *MA 1302 Applied Music II*

Development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 2502 **Ensemble II** **2 Credits**
Prerequisite: *MU 2501 Ensemble I*

Further development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 3110 **Techniques of Modern Composition** **3 Credits**
Prerequisite: *MU 2114 Theory of Western Music IV*

Procedures, theories, and forms used in the composition of contemporary fine art music. Intervallic composition, twelve-tone operations, non-tonal harmony, indeterminacy, contemporary notation and new concepts of meter, duration and form. Development of analytical skills for non-tonal music and composition exercises directed at new concept exploration.

MU 3121 **Composition** **3 Credits**
Prerequisite: *MU 2113 Theory of Western Music III*

Creation of original music, development of compositional abilities, short composition writing, development of skills to analyze and evaluate music, diverse musical examples.

MU 3221 **History of Western Music I** **2 Credits**
Prerequisites: *MU 1112 Theory of Western Music II*
MU 0112 Ear Training II

History of Western music from Medieval through early Baroque period with emphasis on stylistic traits and theoretical concepts of the eras, prehistoric music, Greek music and its importance in phylosophy, education and ethnic, Gregorian chant and secular monophony, evolution of musical notation, development of polyphonic music, vocal and instrumental genres such as mass, motet, madrigal, opera, cantata, oratorio.

MU 3222 **History of Western Music II** **2 Credits**
Prerequisite: *MU 3221 History of Western Music I*

History of Western music from the middle Baroque era to the end of 19th century with emphasis on stylistic traits and theoretical concepts of the eras, development of genres such as sonata, string quartet, concerto, symphony, symphonic poem, character piece, Lied, and opera, comparisons of aestethics and idea of music in baroque, classic and romantic era, rise of instrumental music and virtuosism.

MU 3501 **Ensemble III** **2 Credits**
Prerequisite: *MU 2502 Ensemble II*

Further development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 3502 **Ensemble IV** **2 Credits**
Prerequisite: *MU 3501 Ensemble III*

Further development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 4000 **Selected Topics in Music Performance** **3 Credits**

Selected topics pertaining to the latest development in the world of music

MU 4103 **Form and Analysis** **3 Credits**
Prerequisite: *MU 2111 Harmony (for Music Business)*
MU 2114 Theory of Western Music IV (for Music Performance)

Analytical study of various significant forms-Binary, Rounded Binary, Ternary, Rondo, Sonata, and Fugue. Harmonic and melodic structures used in Western art music.

MU 4112 **Arranging** **3 Credits**
Prerequisite: *MU 2113 Theory of Western Music III*

Techniques of arranging instruments in both large and small ensembles, and arranging music for different ensembles.

MU 4221 **History of Western Music III** **2 Credits**
Prerequisite: *MU 3222 History of Western Music II*

History of Western music from the end of the 19th century to the present era, comparisons of national trends, impressionism, primitivism, atonality, serialism, minimalism, aleatory music, and electronic music, various issues in music, survey of world music.

MU 4223 **Music in Human Life** **3 Credits**

Traditions, belief systems, and practices of world cultures with regards to music. Comparative study and analysis of the music of contrasting ethnic groups in relation to different social contexts. Thematic musical styles in recordings along with traditional, religious, and cross-cultural issues in human life.

MU 4501 **Ensemble V** **2 Credits**
Prerequisite: *MU 3502 Ensemble IV*

Further development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 4502 **Ensemble VI** **2 Credits**
Prerequisite: *MU 4501 Ensemble V*

Further development of techniques as ensemble players and study of selected repertoire to performance standard.

MU 7111 **Concert Attendance I-VIII** **Non-credit**

Attendance in at least two music events per semester represent or organized by the School of Music, including master classes, concerts, recitals, workshops and guest lectures.

NB 1202 **Anatomy** **3 Credits**

Physical features, structure and position of cells, membrane and organs, both in macro and micro anatomy levels, relationship between each section of the human structure and the physical system, growth and development of embryo, lab experiments and application of basic human structures for clinical nursing practice

NB 1203 **Physiology** **3 Credits**

Functions and relationship of body parts and organs in human body systems including the mechanical adjustments of each system to maintain body balance, lab experiments and application of knowledge for clinical nursing practice

NB 1205 **Biochemistry** **3 Credits**

Basic biochemical characteristics and reactions of life occurred at the molecular level including properties and mechanisms of enzymes, bioenergetics and thermodynamics, nucleic acids, carbohydrates, lipids, amino acids, proteins and their metabolisms, steps of gene regulation and protein synthesis, nutritional biochemistry, clinical manifestations of deficiency of vitamins and minerals, importance of hormone and metabolic diseases, and application for nursing practice

NB 1207 **Microbiology and Parasitology** **3 Credits**

Essence of biology, identification and classification of microorganisms that cause communicable diseases which cover bacteriology, mycology, virology, and parasitology, including life cycles, morphology, laboratory diagnosis, diseases, and basic concepts of immunology

NB 1210 **Pathophysiology** **3 Credits**

General concepts in pathophysiology including alteration in functioning of human systems which cause the diseases and affect the state of physiological balance

NB 1212 **Nutrition for Healthy Life Style** **3 Credits**
Prerequisite: *NB 1205 Biochemistry*

Basic principles of nutritional science and therapeutic nutrition, major nutrient, nutrient standards, nutritional assessments, nutritional problems, energy balance, food exchange lists, hospital diets, modified diets and applying nutrition knowledge to promote health and disease management throughout the human life span, foundation to analyze current issues and trends in nutrition and community food supply for health

NB 2209 **Pharmacology** **3 Credits**

Types, sources and principles of drug actions, drug administration, principles of drug actions, drug toxicities, side effects, precautions, drug calculation, measurement and pharmaceutical preparations, drug education and nursing implications including the National List of Drug concerning adverse drug reactions

NB 2211 **Multiculturalism in Health Care** **1 Credit**

Cultural diversity situations related to health and illness, importance of cultural consideration for clients and health care personnel including cultural sensitivity in nursing practice in different scenarios

NB 2212 **Psychology and Mental Health** **2 Credits**

Principles of psychology and mental health, evolution of mental health and psychiatric care, mental health promotion, primary prevention, intervention for maladaptive behaviors, and rehabilitation for chronic mental disorders in individual, family and community

NB 2213 **Health Innovation and Knowledge Management** **1 Credit**

Innovation initiatives based on scientific approach, nursing theory, promotion of health and well-being, systematic try-out method for innovative invention and management of knowledge for networking and public sharing

NB 4201 **Entrepreneurship in Health Care** **3 Credits**

Concept of entrepreneurship of health care management, factors influencing health care business success, development of SME project and presentation

NE 3501 **Spa and Aroma Therapy** **3 Credits**

Overview of the history and principles of spa and aroma therapy, related public health laws and regulations, basic spa management, human anatomy and physiology, aroma massage techniques, health consequences, roles and ethical principles for aroma therapist

NE 3502 **Massage as an Alternative Health Care** **3 Credits**

Basic concept of alternative health care and classification of alternative health care, face massage, foot massage, hand massage, head massage, anatomy and physiology related to massage, advantage and contraindication, management of customer services and alternative health care practices.

NE 3505 **Oriental Exercise for Health** **3 Credits**

Alternative health care related to exercise, practice of Yoga, Taichi, long wooden stick exercise, and Thai classical aerobic exercise

NE 4502 **Adolescent Health** **3 Credits**

Male and female adolescent health issues, gender adaptation, life-style, behaviours, self-image, reproductive and sexual health, alcohol and substance abuse, violence issues, and design of adolescent health promotion initiatives.

NM 3401 **Production for Communication Tools** **3 Credits**
Prerequisite: *CA 1002 Introduction to Photography and Cinematography*

Audio production, theory of sound, recording techniques, digital audio workflow, mix down theory and techniques, video production process, shooting board and vocabulary, cinematography, and basic video editing.

NM 3402 **Film and Time-based Media Production** **3 Credits**
Prerequisites: *CA 2007 Introduction to New Media and Broadcasting*
NM 3401 Production for Communication Tools

Visual language and aesthetics of cinema, digital media, cinematic time and space, continuity and progression of time and story development, workflow for pre-production, production, and post-production.

NM 3404 **Multimedia Editing** **3 Credits**

Conceptualization, principles and characterization of digital images, basic video editing, visual effects and composition.

NM 3410 **New Media Application** **3 Credits**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Understanding new media characteristics, new media technology trends, development of new media application, and effective usage of new media communication.

NM 3411 **Advanced Photography and Digital Imaging** **3 Credits**
Prerequisite: *CA 1002 Introduction to Photography and Cinematography*

Usage of digital photography, technical production using computer image processing, setting up for studio and outdoor photography shoot.

NM 3412 **Creativity and Innovation** **3 Credits**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Narrative storylines, linear and non-linear game narratives, interactivity, web architecture, narrative space principles.

NM 3414 **New Media Journalism** **3 Credits**
Prerequisite: *CA 1006 Introduction to Journalism and Mass Communication*

New journalistic media in various platforms, issues facing current journalists interviewing, reporting, reviewing content, layout and user-friendliness of existing electronic publications.

NM 3417 **Computer Graphics for Communication Design** **3 Credits**

3D character development, composite application, aesthetic value in composition of scenes.

NM 3418 **Interactive Media Art** **3 Credits**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Interactive media production, web function and content delivery, basic web programming, design with interactivity principles.

NM 3419 **Selected Topics in New Media** **3 Credits**

New media technology development in communication, new media effects on society, culture, and people.

NM 3420 **Audience Context Analysis** **3 Credits**
Prerequisite: *CA 2016 Psychology for Persuasive Communication*

Media convergence and understanding context of communication, media literacy, post-modern concepts, popular culture artifact and literature analysis.

NM 4405 **Broadcast and New Media Management** **3 Credits**
Prerequisites: *CA 2007 Introduction to New Media and Broadcasting*
NM 3401 Production for Communication Tools

Production of broadcast and new media, basics of channel content management, programming, the business of broadcast and new media.

NM 4406 **Broadcast Media Production and Directing** **3 Credits**
Prerequisite: *NM 3402 Film and Time-based Media Production*

Principles of directing, concepts of vocal and visual aspects of performance, requirements and characteristics of media and production and managing production, adaptation of content across media.

NM 4407 **Seminar in Broadcast and New Media** **3 Credits**
Prerequisites: *NM 3401 Production for Communication Tools*
NM 3402 Film and Time-based Media Production

Media effects theory, ethical considerations in new media communication, issues that impact broadcast and digital communications.

NM 4408 **Studio Workshop** **6 Credits**
Prerequisites: *NM 3401 Production for Communication Tools*
NM 3402 Film and Time-based Media Production

Entire work process of studio production. Students will be required to create a complete work in the form of film, documentary, or interactive program.

NM 4413 **Advanced Multimedia Editing** **3 Credits**
Prerequisite: *NM 3404 Multimedia Editing*

Advanced post-production techniques, filming techniques for visual effects and post-production, composition of 3D and film elements.

NM 4414 **Sound for Video Production** **3 Credits**
Prerequisite: *NM 3402 Film and Time-based Media Production*

Sound studio equipment, usage of microphone, recording in studio, recording outdoor, automated dialogue replacement (ADR), sound editing and mastering.

NM 4417 **Media Content Analysis** **3 Credits**
Prerequisite: *CA 2016 Psychology for Persuasive Communication*

Content analysis methods, understanding media roles, characteristics of social groups, social structure, and new media effects.

NM 4418 **Integrated New Media Environments** **3 Credits**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Utilizing of multiple new media platforms, developing interactive new media environments for effective communication.

NM 4419 **Utilization of New Media Programming** **3 Credits**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Utilizing programs for the creation of new media communications.

NM 4420 **Studio Internship (200 Hours)** **1 Credit**
Prerequisite: *CA 2013 Utilization of Multimedia Tools*

Understanding new media characteristics, new media technology trends, development of new media application, and effective usage of new media communication.

NS 1307 **Foundation of Professional Nursing I** **2 Credits**
Prerequisite: *NB 1202 Anatomy*
NB 1203 Physiology

Origin of nursing profession, nursing theories, application of self-care conceptual framework, family-centered and holistic approaches through nursing process to assist clients to meet their needs, integration of conceptual foundation and essence of nursing care in every stage of care management and clinical nursing therapeutics for clients with alteration in vital signs and promotion of self-care

NS 1310 **Professional Socialization I** **2 Credits**

Professionalism, values in nursing, current national health system, ethical principles in nursing profession, virtue ethics, professional nursing Acts, human rights, patient rights in health care, forensic nursing, public health law and regulations including ethical issues and legal liability

NS 1311 **Scientific Nursing Approach and Holistic Health Assessment** **3 Credits**

Application of nursing process for clients based on self-care conceptual framework, demonstration and practice of health assessment using holistic approach including physiological, sociological, psychological, and spiritual dimensions

NS 1312 **Health Promotion Throughout Lifespan** **2 Credits**

Health promotion concepts, theoretical framework, methods, healthy people 2020 policy, bio-psycho-social development and health promotion throughout lifespan including discussion of current issues, health promotion strategies and health promotion innovations

NS 1313 **Foundation of Professional Nursing II** **2 Credits**
Prerequisite: *NB 1202 Anatomy*
NB 1203 Physiology

Application of self-care conceptual framework, family-centered and holistic approaches through nursing process to assist clients to meet their needs, integration of conceptual foundation and essence of nursing care in every stage of care management, clinical nursing therapeutics, nursing management for clients with special needs for medication, diagnostic test and other nursing procedures

NS 1403 **Nursing Experience I** **1 Credit**
Prerequisite: *NS 1307 Foundation of Professional Nursing I*

Integration of basic science knowledge, foundation of nursing, nursing process, holistic approach, and self-care conceptual framework through nursing procedures practice in the laboratory

NS 1404 **Nursing Experience II** **1 Credit**
Prerequisite: *NS 1313 Foundation of Professional Nursing II*

Integration of basic science knowledge, foundation of nursing, nursing process, holistic approach, and self-care conceptual framework through practicing nursing procedures in the laboratory

NS 2310 **Alteration in Adult Health & Nursing I** **3 Credits**

Nursing management of adults with alterations in integumentary system, sensory system, digestive system, respiratory system, and cardiovascular system, application of self-care conceptual framework, family-centered and holistic approaches in assisting adults to reach the optimal level of wellness

NS 2311 **Alteration in Adult Health & Nursing II** **3 Credits**

Nursing management of adults with alteration in cell growth and differentiation, immune regulation and hematological system, reproductive system, urinary system, musculoskeletal system, endocrine system, application of self-care conceptual framework, family-centered and holistic approaches assisting adults in reaching optimal level of wellness

NS 2312 **Gerontology Nursing** **1 Credit**

Concept and theory of elderly, bio-psycho-social changes, major health problems, holistic nursing management for elderly, community health care resources, and end of life care, application of self-care conceptual framework, family centred and holistic approaches to assist elderly people in reaching their optimal level of wellness through nursing process

NS 2320 **Family-Centered Care for Infant, Child, and Adolescent I** **2 Credits**

Principles of family-centered care and holistic approach for infant, child, and adolescent, based on self-care conceptual framework, growth and development assessment, well-baby care, minor health problems and injured infants, children, and adolescents in the hospital, family and community, including current adolescent issues and management

NS 2321 **Family-Centered Care for Infant, Child and Adolescent II** **3 Credits**
Prerequisite: *NS 2320 Family-Centered Care for Infant, Child and Adolescent I*

Care for Infant, Child, and Adolescent I, Health problems of infant, child, and adolescent, nursing care for individual infant child, adolescent, and family needs based on self-care conceptual framework

NS 2322 **Holistic Childbearing and Family Nursing I** **3 Credits**

Sociocultural aspects of childbearing family, reproductive and sexual health, genetic and preconception counseling, family planning, infertility, growth and development of fetus, physiological and psychological changes of pregnancy, health promotion and self-care during pregnancy, fetal well-being assessment, health education for childbearing family

NS 2323 **Holistic Childbearing and Family Nursing II** **2 Credits**
Prerequisite: *NS 2322 Holistic Childbearing and Family Nursing I*

Factors influencing labor, phases, stages, and mechanism of labor, holistic nursing for women in normal childbearing during each labor phase, postpartum care, initial newborn assessment, immediate nursing care for newborn

NS 2418 **Clinical Practicum for Professional Nursing Foundation** **2 Credits**
Prerequisite: *NS 1307 Foundation of Professional Nursing I*
NS 1313 Foundation of Professional Nursing II
NS 1403 Nursing Experience I
NS 1404 Nursing Experience II

Clinical nursing experiences in health settings, application of basic nursing knowledge and skills in providing essential nursing care to meet the clients' needs, application of self- care conceptual framework, family- centered and holistic approaches in nursing process, team nursing communication and documentation.

NS 2419 **Clinical Practicum in Adult Health Nursing I** **2 Credits**

Clinical practice in the care of adults and elderly people with alterations in integumentary system, sensory system, digestive system, respiratory system, and cardiovascular system by application of self-care conceptual framework, family-centered and holistic approaches through nursing process and comprehensive health approach

NS 2420 **Clinical Practicum in Adult Health Nursing II** **2 Credits**

Clinical practice in the care of adults and elderly people with alterations in cell growth and differentiation, musculoskeletal system, immune regulation and haematological system, reproductive system, urinary system, and endocrine regulation, the application of self-care conceptual framework, family-centered and holistic approaches through nursing process and comprehensive health approach

NS 2422 **Holistic Childbearing & Family Nursing Practicum I** **1 Credit**

Application of holistic childbearing approach, self-care conceptual framework and nursing process in providing care for uncomplicated pregnant women and families, health education to promote well-being for women and fetus during antepartum period, application of cognitive, affective, psychomotor skills, and critical thinking in practicing in antenatal care unit

NS 2423 **Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum I** **1 Credit**
Prerequisite: *NS 2320 Family-Centered Care for Infant, Child, and Adolescent I*

Clinical nursing experiences in healthcare setting based on self-care conceptual framework, family centered and holistic approaches, and the integrating knowledge of wellness, health promotion and illness prevention, pediatric assessment, growth& development and nursing process for caring infants, children, adolescents and their families.

NS 3316 **Critical care nursing** **2 Credits**

Nursing management for clients with critical health problems, trauma, emergency situations, neurological problem, burns, application of self-care conceptual framework, palliative care family-centered and holistic approaches in assisting clients to reach the optimal level of wellness

NS 3322 **Bio-Behavioral Psychiatric Nursing** **3 Credits**
Prerequisite: *NB 2212 Psychology and Mental Health*

Theoretical perspectives, scientific knowledge, and principles of psychiatric nursing, nursing process and self-care conceptual framework in nursing management for individuals, families, and communities with physical and mental disorders, nursing care plan and nursing intervention for mental health promotion, maintenance, and restoration

NS 3323 **Community Focused Nursing I** **2 Credits**

Concepts and evolution of community health nursing, roles and functions of community health nurses, health care system including concept of primary health care and quality of life, health care reform, national health development plans and current health policy, health economics and national health insurance system, environmental health and contemporary public health problems.

NS 3324 **Disaster Nursing** **1 Credit**

Disaster situation, classification and phase of disaster occurrence, disaster preparedness, disaster management, intervention and triage in disaster site, local and international resources for disaster responses and mitigations

NS 3325 **Holistic Childbearing and Family Nursing III** **3 Credits**
Prerequisite: *NS 2323 Holistic Childbearing and Family Nursing II*

Identification of high risk in childbearing, pregnancy loss and grief, holistic nursing for women with complications in antepartum, intrapartum, and postpartum or for women with obstetric maneuver including holistic nursing intervention for high risk newborn, neonatal resuscitation, and ethical issues in maternity nursing

NS 3326 **Nursing Inquiry I** **2 Credits**
Prerequisite: *BG 1301 Fundamentals of Statistics*

Principles of research methodology, conceptualization and exploration of the nursing profession and/or health issues conducive to nursing inquiry, and writing research proposals derived from nursing and health phenomena

NS 3400 **Mental Health and Psychiatric Nursing Practicum** **2 Credits**
Prerequisite: *NS 3322 Bio-Behavioral Psychiatric Nursing*

Integration of theory and clinical practice in health care settings, promotion of mental health through primary prevention, intervention in maladaptive behaviors, and rehabilitation of chronic disorders for individual, family, and community, utilization of the nursing process and self-care conceptual framework in care management

NS 3401 **Nursing Inquiry II** **1 Credit**
Prerequisite: *NS 3326 Nursing Inquiry I*

Conducting nursing research including data management, data analysis, discussion of research findings and implication to nursing practices

NS 3422 **Holistic Childbearing & Family Nursing Practicum III** **2 Credits**
Prerequisite: *NS 3425 Holistic Childbearing and Family Nursing Practicum II*

Application of holistic childbearing approach, self-care conceptual framework and nursing process for high risk pregnant women during antepartum, intrapartum and postpartum periods, health education to promote well-being for women and newborn with complication, application of cognitive, affective, psychomotor skills, and critical thinking in practicing in antenatal care, labor room, and postpartum units.

NS 3423 **Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum II** **2 Credits**
Prerequisite: *NS 2321 Family-Centered Care for Infant, Child, and Adolescent II*
NS 2423 Family-Centered Care for Infant, Child, and Adolescent Nursing Practicum I

Application of holistic approach and family-centered care for infant, child and adolescent nursing based on self-care conceptual framework, nursing process and knowledge of illness in clinical nursing practice to provide holistic care for infant, child, adolescent, and family

NS 3424 **Critical Care Nursing Practicum** **2 Credits**

Clinical practice in caring clients with critical health problems, traumatic or emergency situations, neurological problems and burns, application of self-care conceptual framework, palliative care, family-centered and holistic approaches through nursing process and comprehensive health approach

NS 3425 **Holistic Childbearing and Family Nursing Practicum II** **2 Credits**
Prerequisite: *NS 2422 Holistic Childbearing and Family Nursing Practicum I*

Application of holistic childbearing approach, self-care conceptual framework for uncomplicated pregnant women during intrapartum and postpartum period, health education to promote well-being for women and newborn, family planning, application of cognitive, affective, psychomotor skills, and critical thinking in practicing in labor room and postpartum unit

NS 4308 **Nursing Leadership and Management** **3 Credits**

Contemporary roles required in nursing administration and team nursing, organizational structure, leadership, decision making process, human resource management, financial management including cost effectiveness analysis, quality management, hospital accreditation, risk management, patient safety goals, quality team development and application nursing informatics in management

NS 4320 **Community Focused Nursing II** **3 Credits**
Prerequisite: *NS 3323 Community Focused Nursing I*

Concepts of family as client, family health, family nursing process and home visit, epidemiology, concepts of community as partner, community health study process, health education, home health care, school health, dental health, occupational health, international health and public health laws and regulations.

NS 4322 **Professional Socialization II** **2 Credits**
Prerequisite: *NS 1310 Professional Socialization I*

Seminar on challenges and trends in nursing profession, analysis of current situations in healthcare environment and policies, political and social issues influencing nursing profession, nursing image, nursing shortage and employment opportunity in dynamic global society

NS 4323 **Therapeutic Health Assessment** **2 Credits**
Prerequisite: *NS 1311 Scientific Nursing Approach and Holistic Health Assessment*

Progressive physical and mental health assessment, laboratory investigations and interpretation of the results, differential diagnosis, primary medical treatment and nursing care, minor surgery, common drug usage and prescription according to the Professional Nursing Acts, and referral system

NS 4325 **Nursing Informatics** **1 Credit**
Prerequisite: *BG 2301 Information Technology for Nurses*

Essence of nursing informatics, the current information technology applicable to global health and consumer, the issues of utilities nursing informatics in clinical management, administration, education, and research, computer based patient record, and hands-on experience with nursing informatics system of health care setting.

NS 4413 **Nursing Leadership and Management Practicum** **2 Credits**
Prerequisite: *NS 4308 Nursing Leadership and Management*

Clinical practice in nursing service management and quality health team, infectious control, risk management, total quality management; leadership, team participation, problem solving and decision making in incident analysis and development of continuous quality improvement project including application of nursing informatics in nursing management

NS 4417 **Community Focused Nursing Practicum** **3 Credits**
Prerequisite: *NS 4320 Community Focused Nursing II*

Application of theoretical knowledge and concepts of community focused nursing to work with individual, family and various groups of people in community settings, apply family nursing process in home care and long term care, practice with interdisciplinary health care team and collaborative partnership with community people, using the complete community study process to identify health needs, health promotion, prevention of illness, and promotion of quality of life for entire community

NS 4418 **Therapeutic Health Assessment Practicum** **1 Credit**
Prerequisite: *NS 4323 Therapeutic Health Assessment*

Clinical practice in core competency and roles of nurses in progressive health assessment, clinical practice of history taking, lab investigation and interpretation of the results, differential diagnosis, primary medical treatment, prevention, health promotion and referral skills for proper management according to the Professional Nursing Acts

NS 4419 **Comprehensive Nursing Practicum** **2 Credits**
Prerequisite: *All nursing courses must be completed*

Comprehensive clinical experiences in healthcare settings based on the selected area of students' interests, preparations of professional employment for local and international health care services

PC 3301 **Art and Literature Appreciation** **3 Credits**
Prerequisites: *CA 1001 Introduction to Communication*
CA 2015 Introduction to Performance Communication

Aesthetic perspective, artistic styles, visual elements, performing arts, entertainment media, literature, fine arts, music and film.

PC 3302 **Principles of Performance Design** **3 Credits**
Prerequisites: *CA 1001 Introduction to Communication*
CA 2015 Introduction to Performance Communication

Basic elements of arts and design in performance, basic designing such as point, line, form, shape, space utilization, color, pattern, texture, balance, proportion, rhythm, emphasis, unity including the basic sketch design, conveying ideas, process of designer working in costume, scenic, lighting design as well as unity of visualization in performance communication.

PC 3305 **Script Writing and Analysis** **3 Credits**
Prerequisites: *CA 1001 Introduction to Communication*
CA 2015 Introduction to Performance Communication

Principles of storytelling for performance, elements of script and story-telling, creating theme, plot and story as well as creating characters, creating conflicts for continuity story, use of dramatic and character's actions to tell the story, critical analysis of script structure, genre, theme, style, sub-text meaning, dramatic event, and point of view of the story-teller, actor, director, designer, and audience including critique writing.

PC 3306 **Marketing Management for Performance Project** **3 Credits**
Prerequisite: *AD 3101 Principles of Marketing Communication*

Marketing for performance, principles of financial and budgeting management, writing a proposal, setting up marketing/ PR plan and developing communication plan for marketing and evaluation.

PC 3307 **Visualization of Stage/ Event** **3 Credits**
Prerequisites: *CA 2015 Introduction to Performance Communication*
PC 3301 Art and Literature Appreciation

Principles of visualization on stage/event, function, consistency of performance visualization elements, basic design concept of scenery, prop. costume and lighting, introduction to performance / event art direction, understanding in principles of design process , conceptualize and stage visualization interpretation.

PC 3308 **Performance/Event Criticism** **3 Credits**
Prerequisite: *PC 3301 Art and Literature Appreciation*

Principles of criticism in performing arts/event, interdisciplinary of performing arts, definitions and elements, critical frameworks and perspectives, theatre critical writing and analysis.

PC 3320 **Script Writing and Adaptation in Thai** **3 Credits**
Prerequisite: *PC 3305 Script Writing and Analysis*

Script writing in advanced, selecting story for script adaptation, dimensions and perspectives for adaptation, script adaptation for various purpose, revising script in Thai for theatre, film and TV.

PC 3321 **Script Writing and Adaptation in English** **3 Credits**
Prerequisite: *PC 3305 Script Writing and Analysis*

Script writing in advanced, selecting story for script adaptation, dimensions and perspectives for adaptation, script adaptation for various purpose, revising script in English for theatre, film and TV.

PC 3322 **Acting for Personality/ Social Interaction** **3 Credits**
Prerequisite: *CA 1001 Introduction to Communication*

Acting Adaptation for personality development, mental and physical preparation, self-acknowledgement, SWOT analysis, human nature, human perception, law of attraction, self –esteem, self-confidence, gesture, facial expression, vocal training, public speaking, wardrobe and make-up for different occasions.

PC 3323 **Fundamentals of Acting** **3 Credits**
Prerequisite: *CA 2015 Introduction to Performance Communication*

Basic acting, understanding the relation between vocal and physical expression for performance purpose including communication, physical and vocal preparation, relaxation, concentration, body movement, space usage for performance, imagination, emotion, creating character, character interpretation, creative movement, awareness, objective of character for play, improvisation skill, scene interpretation, and integration of vocal and physical skill for performance.

PC 3324 **Sound for Performance/ Event** **3 Credits**
Prerequisite: *CA 2015 Introduction to Performance Communication*

Basic sound utilization and sound management for performance/ event production, principles of sound classification, sound acoustic, influence conditions of sound quality, sound equipment, microphone allocation technique (Miking), sound selection, sound creation, dubbing, sound effect for live performance/ event, basic recording, mixing down processes, and responsibility of sound function in performance/ event production.

PC 4306 **Stage/Event Management** **3 Credits**
Prerequisite: *CA 2015 Introduction to Performance Communication*

Stage/event management conceptualization, fundamentals of stage management, process of stage management from pre-production to post-production, responsibility of stage management function, and internship in function of stage management in performance/event organization.

PC 4308 **Performance Communication Workshop I** **3 Credits**
Prerequisite: *PC 3306 Marketing Management for Performance Project*

Pre-production process of performance production, production planning, budgeting /financial plan, script preparation, script interpretation, marketing and PR plan, directing preparation, audition process, and research in theatrical design in properties, scenic, costume, light and sound.

PC 4309 **Performance Communication Workshop II** **3 Credits**
Prerequisites: *PC 4306 Stage/Event Management*
PC 4308 Performance Communication Workshop I

Production process of performance production, financial/ budgeting control, marketing/ PR activities, script development, directing, rehearsal process, operating in lighting and sound creation, creating scenic, properties, costume and make-up, theatre management, technical run-through, dress rehearsal, opening show, working in post-production and evaluation process.

PC 4310 **Seminar in Performance Communication** **3 Credits**
Prerequisite: *PC 4305 Marketing Management for Performance*

Performance communication in varieties of different styles, problems in cultural and social context, relation between art and therapy, performance communication role and society, performance role for propaganda, performance communication and collective community, theatre management in commercial production, seminar management and presentation.

PC 4311 **Production Management for Performance** **3 Credits**
Prerequisite: *PC 4305 Marketing Management for Performance*

Managing performance/event production, type of performing arts organizations, production planning, organization chart, managing man power and duty, financial and accounting, administrative function, managing the production process, producer role/ responsibilities, producing for commercial performance, legal and ethical concern for production management.

PC 4315 **Fundamentals of Lighting** **3 Credits**
Prerequisite: *CA 2015 Introduction to Performance Communication*

History of stage lighting , production process of lighting function, lighting instrument and equipment, lighting practice, electricity for lighting, lighting plan, lighting cue, script analysis for lighting design, lighting research, design concept, lighting sketch, critical stage lighting, rhythm and emotion creativity with lighting.

PC 4316 **Directing** **3 Credits**
Prerequisites: *PC 3307 Visualization of Stage/ Event*
PC 3323 Fundamentals of Acting

Basic directing, process of directing in performance, responsibility of directing function, script analysis, stage composition and blocking design, director's design concept, rehearsal process, conveying theme, concept and idea with directing, and character analysis.

PC 4325 **Costume and Make-up Selection** **3 Credits**
Prerequisites: *PC 3302 Principles of Performance Design*
PC 3307 Visualization of Stage/ Event

Selecting costume and make up for performance, usage of costume, concept of costume and make up selection for performance, time and space for appropriate selection, history of costumes, definition of costume, types of costume, costume and fashion, process of costume design and selection, and straight make-up and fancy make-up workshop.

PC 4326 **Scenery and Prop Creation** **3 Credits**
Prerequisites: *PC 3302 Principles of Performance Design*
PC 3307 Visualization of Stage/ Event

Creating scenery and property in performance/ event, space utilization, scenery and prop design process including design document, concept of scenery and prop, form and style of scenery, idea and design concept, basic stage craft, materials and tools for scene and prop creation and basic scene craft workshop.

PC 4327 **Selected Topics in Performance Communication** **3 Credits**
Prerequisite: *CA 2015 Introduction to Performance Communication*

Performance communication development in social context, performance communication effect or phenomenon of performance communication in society, culture and people.

PD 1301 **Technical Drawing** **3 Credits**

Various methods of drawing used by product designers such as orthographic projection, exploded view drawing, perspective projection, and shade and shadow application.

PD 1302 **Design Principles** **3 Credits**

Design principles that focus on basic understanding of the interrelationship between form and function which leads to attractive and functional designs. The principles include: Additive Design, Integrative Design, Integral Design, Sculptural Design, and Organic Design.

PD 1303 **Computer Applications for Product Design** **3 Credits**

Creative potential of computer applications in the context of three dimensional design and the opportunity to explore graphic applications relevant to the area of study.

PD 2201 **Product Design I** **6 Credits**

Introduction to the role of designed objects in our everyday experience with emphasis on the understanding of relationship between functions, aesthetic, and human needs and behavior through basic surveys and analyses of product-related problems in corresponding object-oriented projects.

PD 2202 **Product Design II** **6 Credits**
Prerequisite: *PD 2201 Product Design I*

Concept of OBJECT to OBJECT and OBJECT to its ENVIRONMENT relationship, which include aesthetic and functional compatibility, specific environment, spatial requirement, and problem solving through corresponding object-oriented projects.

PD 2301 **Model Making** **3 Credits**

Tools, techniques, and materials used in the production of both study and prototype models with emphasis on the use of foam, plaster, wood, and plastics, including casting/molding techniques explored through a series of small skill-oriented projects.

PD 2302 **History of Arts and Design** **3 Credits**

Chronological study of art and design throughout history from a range of places, time and culture through explorations, analyses, and critiques of art and design works in order for students to be imbued in the valuable development of mankind visual culture.

PD 2303 **History of Product Design** **3 Credits**

Chronological exploration through the development of product design of the 19th and the 20th century emphasizing on design movements that contributed to global design development, from pre-modern to modern to postmodern design, expressions of innovative ideas and philosophical concepts within given cultural and political context.

PD 3201 **Product Design III** **6 Credits**
Prerequisite: *PD 2202 Product Design II*

OBJECT to PERSON relationship through user-oriented projects with emphasis on human factors, ergonomics consideration, user-centered design, ecological issues, product semantics, team-based milieu research on user interaction and socio-economic values.

PD 3202 **Product Design IV** **6 Credits**
Prerequisite: *PD 3201 Product Design III*

Most complex level of product designing aimed at developing a sense of understanding in the OBJECT to ECOLOGY relationship based on prominent ecological theories and system design for sustainability such as Design for Sufficient Economy and Doi Tung SALD through object-oriented projects with emphasis on sustainable design.

PD 3301 **Material and Manufacturing Processes I** **3 Credits**

Material properties and manufacturing processes focusing on paper, wood, and metals covered through lectures and field trips to local manufacturing facilities to gain firsthand experience of the manufacturing processes.

PD 3302 **Material and Production Processes II** **3 Credits**

Material properties and manufacturing processes, focusing primarily on plastics, fiberglass, textiles, and modern composite materials covered through lectures and field trips to local manufacturing facilities to provide firsthand experience of the manufacturing processes.

PD 3303 **Product Design and Marketing Principles** **3 Credits**
Prerequisite: *MGT 1101 Introduction to Business*

Basic principles of marketing involved in product development cycle, which include product policies, distribution policies, price policies, sales promotion policies, and improvement of marketing efficiency through trans-disciplinary lectures, assignments and projects from design strategic planning to design implementation through participation in the University's Dummy Company.

PD 3304 **Product Design and Marketing Communications** **3 Credits**
Prerequisite: *PD 2205 Product Design and Marketing Principles*

Introduction to marketing communication elements related to building and maintaining of brand equity, which include advertising, sales promotion, public relations, personal selling, event sponsorships, and direct marketing in order to provide an understanding of product designer's role, contribution and involvement in product development cycle.

PD 3305 **Practicum in Product Design** **2 Credits**

A 240 working hour of professional training in product design industry to expose students to all kinds of hands-on experiences and knowledge in the real business world.

PD 3401 **User Interface Design** **3 Credits**

Principles of user interface design applicable in graphical environment, command-line, as well as product application in order to provide an understanding of how to communicate effectively with users through visual attributes of products.

PD 3402 **Graphic and Packaging Design** **3 Credits**

Packaging design that integrates marketing, graphical and three-dimensional design knowledge essential in creating innovative packaging for different kinds of product ranging from food and beverage, beauty and personal care to toys and home products with emphasis on product branding.

PD 3403 **Experience Design for Exhibitions** **3 Credits**

Unique expressions of content in exhibition design such as storytelling and the use of media to create meaningful experiences through immersive experience which persuades, simulates, informs, entertains, as well as influences human behavior.

PD 3404 **Fashion and Textile Design** **3 Credits**

Fashion design with emphasis on basic skills of fashion design practice such as draping, pattern cutting, sewing, and fashion illustrating with comprehensive approach to conceptual design and interdisciplinary thinking.

PD 3405 **Jewelry Design** **3 Credits**

Traditional and contemporary jewelry design with emphasis on creativity, innovation, experimentation, and technical skills of material application.

PD 3406 **Toy and Play Design** **3 Credits**

Toy and play design with emphasis on understanding of children development and psychology, design and engineering of hard and soft toys, game design, model making, product materials, and safety considerations.

PD 4201 **Product Design V** **6 Credits**
Prerequisite: *PD 3202 Product Design IV*

Concept of PERSON-to-PERSON relationship especially among products, social interactions, and mass marketing necessary in product branding, marketing communication, and product design for manufacturing through industry-coordinated projects.

PD 4202 **Senior Project** **6 Credits**
Prerequisite: *PD 4201 Product Design V*

Individual study of an approved project with appropriate complexity level that can reflect understanding of theoretical and pragmatic dimension of product design.

PD 4301 **Individual Study in Product Design** **3 Credits**

Opportunity in pursuing individual interest pertaining to Product Design through research under the supervision of an advisor.

PD 4302 **Design in Emerging Market** **3 Credits**

Study of how to navigate through emerging markets, which are characterized by immaturity in product design literacy, manufacturing technology, and environmental policies and regulations through exploration of local as well as global product design emerging market conditions and contingencies.

PD 4303 **Professional Ethics** **3 Credits**

Ethical conducts of professionals in the product design industry: designing to benefit clients, users, ecosystem, culture, and profession; intellectual property rights (IPR) essentials: intellectual property law, conditions for protection, copyright ownership and incentives, permitted acts, and enforcement of copyright.

PR 3202 **Strategic Public Relations Campaign Planning and Evaluation** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Strategic public relations planning through the development of the public relations campaign for business, social, political, and other purposes including the evaluation strategies.

PR 3204 **Marketing Public Relations** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Strategies and implementations of public relations to attain various marketing objectives, how marketers effectively and efficiently use public relations in marketing communication campaign to build brand, win acceptances among consumers and gain competitive advantage in the marketplace.

PR 3210 **Negotiations** **3 Credits**
Prerequisites: *CA 1001 Introduction to Communication*
CA 2016 Psychology for Persuasive Communication

Principles and practices of negotiation, impact of verbal and non-verbal communication upon the negotiating process, including development of skills in managing with the conflict resolutions and maintaining business relations.

PR 3214 **Organizational Communication** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Theories and concepts of organizational communication to deal with the organization's employees, including the various theories and practice of strategic communication in the organization as well as the management of effective internal communication programs, goals of internal communication such as sustaining morale and good employee relations, informing employees about internal changes, communication to increase employees' understanding of the organization's products and services, organization's ethics, and culture.

PR 3215 **Writing for Public Relations in English** **3 Credits**
Prerequisites: *BG 2001 English IV*
CA 2005 Introduction to Public Relations

Public relations writing for diverse audiences using a variety of formats such as news releases, photo captions, media advisories, pitch letters, brochures/posters, speeches and newsletters. Students will be assigned to create effective public relations materials by reviewing good writing principles. This course will use English as a medium of instruction.

PR 3216 **Writing for Public Relations in Thai** **3 Credits**
Prerequisites: *GE 1403 Communication in Thai*
CA 2005 Introduction to Public Relations

Public relations writing for diverse audiences using a variety of formats such as news releases, photo captions, media advisories, pitch letters, brochures/posters, speeches and newsletters. Students will be assigned to create effective public relations materials by reviewing good writing principles. This course will use Thai as a medium of instruction.

PR 3217 **Desktop Publishing/ Presentation Graphics** **3 Credits**
Prerequisites: *CA 2005 Introduction to Public Relations*
CA 2013 Utilization of Multimedia Tools

Application of public relations tools and techniques, especially, desktop publishing and computer-generated presentations, including how to produce pamphlets, brochures, newsletters and other publications used by public relations practitioners.

PR 3218 **Special Events Management for Public Relations** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Various methods to organize special events such as seminar, exhibition, show, contest or even get-together, from concept to planning, arranging everything from budgeting, sponsorship, formalities to all the components/ ingredients, accounting and post event activities.

PR 3224 **Applied Research for Public Relations** **3 Credits**
Prerequisites: *CA 2005 Introduction to Public Relations*
CA 3011 Communication Arts Research

Procedures and processes of qualitative and quantitative researches that are commonly used in Public Relations planning, including content analyses, public opinion surveys, focus groups, in-depth interviews, and observations. Students will be assigned to conduct a primary research using the aforementioned methodologies.

PR 3225 **Personality Development and Personal Branding** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Concepts, principles, and techniques of personality development, impression management and personal branding, appropriate authentic self-presentation, improvement of external image such as make-up, hairstyling, dressing, social communication through social events such as host or guest and preparing for media appearance. Students will be assigned to utilize them to create an image or brand for themselves as well as celebrities.

PR 3227 **Media Relations and Planning** **3 Credits**
Prerequisites: *CA 2005 Introduction to Public Relations*
PR 3215 Writing for Public Relations in English
or *PR 3216 Writing for Public Relations in Thai*

Strategic relationships and use of public relations tools to communicate with the media, nature of the mass media, strategic communication planning, media planning and evaluation theories including how to prepare the press kit, press conference, press tour, and how to be corporate spokesperson.

PR 3228 **Intercultural Communication** **3 Credits**
Prerequisites: *CA 1001 Introduction to Communication*
CA 2005 Introduction to Public Relations

Fundamental elements of intercultural communication, basic intercultural theories, socio-cultural influence, psycho-cultural influence, environmental influence, differences of non verbal and verbal communication in various cultural background, building and maintaining relationship in multi-culture society, adjusting and developing the working style when cooperating in new culture as well as designing and implementing effective public relations programs to suitably achieve success in diverse market.

PR 3229 **Folk and Traditional Media Communication** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Folk and traditional media including elements, characteristics, content and forms of folk and traditional media, importance and impact of folk and traditional media in communication, folk and traditional media in socio-cultural and ritual communication, application of folk and traditional media in modern communication era, case study of using folk media and traditional media for the social development, community relations as well as other communication campaign.

PR 3230 **Digital Public Relations** **3 Credits**
Prerequisites: *CA 2005 Introduction to Public Relations*
CA 2013 Utilization of Multimedia Tools

Technical and theoretical elements that compose digital media and social media, approaches to listening, monitoring and measuring, writing for digital media, strategic approaches to engage in digital media and social media, ethics, disclosure, applicable laws, security and privacy as well as application of digital media for public relations purposes of the various types of organizations.

PR 4201 **Corporate Communication and Stakeholder Relations** **3 Credits**
Prerequisites: *PR 3204 Marketing Public Relations*
PR 3214 Organizational Communication

Corporate image, identity and reputation building, including how to conduct image audits, write corporate communication plans as well as understand corporate social responsibility concept.

PR 4207 **Public Relations Workshop I** **3 Credits**
Prerequisite: *CA 3011 Communication Arts Research*
PR 3202 Strategic Public Relations Campaign Planning and Evaluation

Training in selecting, creating and applying tools, techniques along with the principles of public relations for solving various cases and problem situations. Students will be assigned to write up the communication campaign planning focusing on full-scale of public relations to serve an actual "client".

PR 4208 **Public Relations Workshop II** **3 Credits**
Prerequisites: *PR 3202 Strategic Public Relations Campaign Planning and Evaluation*
PR 3215 Writing for Public Relations in English
or *PR 3216 Writing for Public Relations in Thai*

Training in public relations campaign based on the planned strategic direction regarding public relations program management, public relations implementation, production of public relations materials, and program evaluation. Students will be assigned to choose their own topics under the supervision of their instructor.

PR 4209 **Seminar in Public Relations** **3 Credits**
(PR Senior students Only)

Analysis and discussion on contemporary topics of public relations, such as corporate social responsibility, community relations, social media, crisis management, corporate image. Students will be assigned to do research in that particular topics, analyze, and discuss on various aspects. In addition, students will have opportunities to attend and listen to PR professionals based on the topics of each semester.

PR 4211 **Public Relations Internship (200 Hours)** **1 Credit**
(PR Students Only)

Internship program assigning students to be trained in a corporation, nonprofit company, educational institution, governmental/non-governmental organization, or public relations agency that provides public relations experiences. Students are required continuously to work for at least 200 working hours and present the training results to the instructors.

PR 4219 **Community Relations** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Community relations, corporate social responsibility, strategies, engagement for developing long-term relations, developing communication platform for communicating with community groups, including planning, implementation, monitoring, and evaluation. Students will be assigned to apply the concepts for building the relationship with both offline and online community.

PR 4220 **Financial and Investor Relations** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Factors influencing investment decisions, interpreting and communicating financial data, understanding relevant regulations, corporate governance best practices, effective use of investor communication tools, and working with such audiences as institutional and retail investors, sell-side analysts, and financial media.

PR 4221 **Public Relations for Issue and Crisis Management** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Nature of issues and crisis management from a strategic communication perspective, various issues, risks and crisis situations, current case studies on strategic issues, risks, and crisis communication methods, including how to develop a crisis communication plan.

PR 4222 **News Writing and Reporting** **3 Credits**
Prerequisites: *BG 2001 English IV*
CA 1006 Introduction to Journalism and Mass Communication

Fundamentals of news gathering, writing, and reporting of news worthy events and personalities. Finished work will be ready for publication and broadcasting.

PR 4223 **Magazine/Feature Writing** **3 Credits**
Prerequisite: *BG 2001 English IV*

Researching, interviewing, and writing feature articles for magazines and newspapers, including freelancing and submitting articles to publications.

PR 4226 **Selected Topics in Public Relations** **3 Credits**
Prerequisite: *CA 2005 Introduction to Public Relations*

Selected topics which are not covered in regular departmental course offerings. Topics will be announced in advance.

REM 3111 **Principles of Real Estate** **3 Credits**
Prerequisite: *MGT 1101 Introduction to Business*

Overview of real estate business and professional practices, special terms, nature and description of real estate, various types of property, basic rights and interests in real estate, land-use controls, forms of ownership, various real estate fields of property management, development, investment, real estate finance and real estate appraisal.

REM 3112 **Real Estate Law** **3 Credits**

General principles of real estate law and legal aspects which are related to the real estate business, property rights, subdivision regulations, ownership in real estate, transferring and registering title, regulations of land-use and zoning, housing and condominium development laws, construction laws and other contracts related to the real estate transactions.

REM 3113 **Real Estate Economics** **3 Credits**
Prerequisites: *BG 2401 Microeconomics*
and *BG 2400 Macroeconomics*

Demand and supply of real estate, real estate business cycle, real estate cycle, real estate markets, urban land-use, market failure and remedies in real estate.

REM 3114 **Building Design and Construction Techniques** **3 Credits**

Basic knowledge of techniques and process used to design and construct a building, terms and symbols used in construction drawings, types of construction materials, construction technology and equipment, quantity take off technique, scheduling techniques, process to construct building structure, architecture, finishing and building mechanical systems.

REM 3211 **Principles of Real Estate Development** **3 Credits**
Prerequisites: *MGT 2900 Principles of Management*
REM 3111 Principles of Real Estate

Methods in real estate development for various types of real estate business, various participants in the real estate development process both public and private, development process, including conceptual development, feasibility study, real estate cycle market analysis, contracting and basic concepts of project management.

REM 3212 **Real Estate Finance** **3 Credits**
Prerequisites: *FIN 2700 Money, Banking and Financial Markets*
REM 3111 Principles of Real Estate

Financial techniques to sell and buy real estate property, types of financial institutions and sources of funds, types of loan, underwriting, analysis of project development loan and mortgage loan, factors and principal process in real estate lending, including various financial calculations used in real estate business, and government's current policies regarding real estate finance.

REM 3213 **Real Estate Appraisal** **3 Credits**
Prerequisite: *REM 3111 Principles of Real Estate*

Introduction to real estate appraisal, definition of value, objectives of appraisal, data analysis, land (site) and building survey, appraisal report, with emphasis on the three basic approaches to calculate value: Cost Approach, Market Approach and Income Approach.

REM 3214 **Principles of Real Estate Investment Analysis** **3 Credits**
Prerequisite: *REM 3212 Real Estate Finance*

Process of real estate investment and analysis, methods in real estate investment analysis, including traditional method and discounted cash flow method, prelim-financial feasibility study, real estate investment assumptions, real estate investment analysis of various real estate segments, real estate investment analysis report, other types of real estate investment vehicles.

REM 4112 **Computer Applications in Real Estate** **3 Credits**
Prerequisite: *REM 3212 Real Estate Finance*

Various computer applications for real estate management decision and practice, computer software programs including spreadsheet, database management system, project management software, floor plan & mapping software, applications covering various areas including real estate finance, real estate investment analysis, and project planning and control.

REM 4113 **Principles of Property Management** **3 Credits**
Prerequisites: *REM 3111 Principles of Real Estate*
REM 3114 Building Design and Construction Techniques

Basic management principles for income producing properties, process for making management plans, property marketing, lease management, roles and right of landlord and tenant, personnel management, management and maintenance of different types of property especially residential and commercial.

REM 4131 **Real Estate Project Management** **3 Credits**
Prerequisites: *REM 3211 Principles of Real Estate Development*
REM 3114 Building Design and Construction Techniques

Procedure and basic technique throughout project management life cycle to fulfill a real estate development project, planning and control project schedule, cost and quality, organization methods and project team, leadership, risk management, project feasibility analysis and project contract.

REM 4132 **Advanced Real Estate Investment Analysis** **3 Credits**
Prerequisite: *REM 3214 Principles of Real Estate Investment Analysis*

Comprehensive real estate feasibility analysis for both low-rise housing and condominium investments, analysis application through computer software packages with the aspects of market, finance, legal, construction, and taxation, analysis of investment risk, tax planning for investment, inflation and investment cycle, and basic strategies for investment portfolio.

REM 4141 **Advanced Real Estate Appraisal** **3 Credits**
Prerequisite: *REM 3213 Real Estate Appraisal*

Advanced techniques in valuation, including the residual method, discounted cash flow method, and various real estate appraisal theories, standard practice for appraisers, valuation of pending properties, fee simple, lease fee estate and leasehold estates, use of statistics, accounting, computer software and financial analysis in appraising real estate.

REM 4142 **Professional Appraisal Practice and Ethics** **3 Credits**
Prerequisite: *REM 3213 Real Estate Appraisal*

Appraisal standards, category of property appraisal, qualifications of valuer, objectives and basis of valuation, assumptions, conditions and limitations, duties and responsibilities of valuer, professional code of ethics, professional negligence and liability, arbitration and dispute resolution, role of expert witness, lifecycle of professional valuation business, and problems and obstacles in appraisal profession.

REM 4151 **Corporate Real Estate Management** **3 Credits**
Prerequisite: *REM 4113 Principles of Property Management*

Corporate real estate environment analysis and organization structure, operations and management planning for property, strategic planning of efficiency improvement and cost reduction, local community relations management, market and economic timing, buy/hold or sell property decision analysis, location selection strategy, space utilization management, risk management strategy.

REM 4152 **Facilities Operations and Maintenance** **3 Credits**
Prerequisite: *REM 4113 Principles of Property Management*

Building engineering system and building components, facility and building components maintenance operation, energy utilization and management, building environmental management green building, building user's safety and health management.

REM 4191 **Seminar in Real Estate Business** **3 Credits**
Prerequisites: *REM 3211 Principles of Real Estate Development*
Senior Standing (over 100 credits)

Comprehensive review of various special aspects of real estate development experience and practices, group and individual real estate research, and case study in relevant current issues.

REM 4192 **Seminar in Property Valuation** **3 Credits**
Prerequisites: *REM 3213 Real Estate Appraisal*
Senior Standing (over 100 credits)

Various aspects of real estate appraisal experience and practices, case studies, workshops, and fieldtrips related to property valuation.

REM 4193 **Seminar in Property Management** **3 Credits**
Prerequisite: *REM 4113 Principles of Property Management*

Comprehensive review of various special aspects of property management experience and practices, property management research, case study in relevant current issues and fieldtrips related to property management.

REM 4221 **Directed Study in Real Estate** **3 Credits**
Prerequisite: *Consent of the Department Chairperson*

Under the guidance of the Department Chairperson, a student will carry out an approved research project in real estate business. Depth, detail and originality of the study will determine the project evaluation.

REM 4222 **Capital Markets Related to Real Estate Business** **3 Credits**
Prerequisite: *REM 3214 Principles of Real Estate Investment Analysis*

Structures and types of capital markets as sources of fund for real estate business, related types of security and market that are applied for real estate investment including Mutual Fund, Property Fund and Secondary Mortgage Market, regulations and procedures to list and issue securities in the Stock Exchange of Thailand (SET), criteria of investment risk analysis in different types of capital market

REM 4231 **Real Estate Marketing and Brokerage Management** **3 Credits**
Prerequisite: *REM 3211 Principles of Real Estate Development*

Techniques for marketing commercial-investment properties; planning, process, and methods of marketing including marketing program, selling and negotiation strategy, information systems supporting marketing, roles of brokerage business including services, relationship to owner, responsibilities, brokers' code of ethics, and development of a broker profession.

REM 4241 **Valuation for Special Purposes** **3 Credits**
Prerequisite: *REM 3213 Real Estate Appraisal*

Methods and techniques for appraisal of assets used for special purposes such as intangible assets, valuation for statutory purposes e.g. tax, expropriation, valuation of assets for non-market assets, plant and machinery, concepts to support valuation of various intellectual properties, including patent, copyright, brand name, goodwill, and share value.

REM 4251 **Income-producing Property Management** **3 Credits**
Prerequisite: *REM 4113 Principles of Property Management*

Property manager roles and duties, commercial leasing process, lease contract management, lease negotiation in theory and practice, tenant/landlord relationship management, juristic person management.

REM 4381 **Internship in Real Estate Business (300 Hours)** **3 Credits**
Prerequisite: *Consent of the Department Chairperson*

In the final semester, students may arrange for an Internship Program with a company related to real estate business for at least 300 working hours. Course evaluation based on daily progress record, overall training discussion report, and performance evaluation by the immediate supervisor.

REM 4382 **Internship in Real Estate Appraisal (300 Hours)** **3 Credits**
Prerequisite: *Consent of the Department Chairperson*

In the final semester, students may participate in an Internship Program with a company related to real estate appraisal for at least 300 working hours. Course evaluation based on daily progress record, overall training discussion report, and performance evaluation by the immediate supervisor.

REM 4383 **Internship in Property Management (300 Hours)** **3 Credits**
Prerequisite: *REM 4113 Principles of Property Management*

In the final semester, students may participate in an Internship Program with a company related to property management for at least 300 working hours. Course evaluation will be based on daily progress record, overall training discussion report, and performance evaluation by the immediate supervisor.

SC 1101 **Computer Programming I** **4 Credits**

History of computer, components of a computer system, coding and numbering systems, algorithm and development process of algorithms and expression of algorithms in terms of flowchart and pseudo code, implementation of algorithms using one of the high level languages that are used widely in the industry with emphasis on the nature and structure of the language, techniques of programming for both numerical and non-numerical processing, structure of the programming languages and how to develop structured programming.

SC 2101 **Computer Programming II** **4 Credits**
Prerequisite: *SC 1101 Computer Programming I*

Algorithms development to solve more complex problems, analysis of more complicated programs as well as modification of the programs, string processing, searching and sorting algorithms, and abstract data types such as linked list, stack, and queue, second high level language which will be widely used in the further courses with emphasis on characteristics of the structured programming and modular programming, application of basic data structures and algorithms to solve various complicated problems.

SC 2151 **Introduction to Microcomputer Application** **3 Credits**

Structure and characteristics of microcomputers, and the techniques of applying microcomputer technology, focus on software packages such as word processing, spreadsheet, database management systems, etc. The course will cover current technologies as well as future trends.

SC 2210 **Files Organization** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Characteristics of computer files and mass storage media, operations on files, file organization and access methods: sequential, indexed-sequential, direct, extendible hashing, and B-trees, design of file management systems including exercises in C++ or other high-level languages.

SC 2211 **Data Structures and Algorithms** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Analysis of complexity of algorithms, various data structures including array, string, stack, queue, dequeue, tree, graph, set and heap, applications and analysis of algorithms developed employing the data structures mentioned above including time and memory requirement analysis of various searching and sorting algorithms.

SC 2212 **Database Systems** **3 Credits**
Prerequisites: *SC 2210 Files Organization and*
SC 2211 Data Structures and Algorithms

Database systems and database management, types of database systems emphasizing on relational database, functional dependency, normalization, query optimization, integrity and security of database systems, and concurrency control.

SC 2213 **Advanced Programming** **4 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Practical software development to solve more complex problems, analysis of more complicated programs as well as implementation of the programs, practical programming. The computer science students have to pass the practical programming examination in order to fulfill the requirement of this course.

SC 2220 **Computer Organization** **3 Credits**

Computer systems configuration which includes the functions of the components of CPU with emphasis on ALU, CU and registers, memory unit and devices as well as connection of each component by the system bus, binary representation of various data types and machine instructions, microcodes, fundamentals of system programs such as linking, loading and execution of programs, assembly language programming.

SC 2231 **Mathematics Foundation for Computer Science** **3 Credits**

Discrete mathematics as the basis of computer science, set theory, relation and function, recursive functions, logic and logical proving, mathematical reasoning, graph theory, tree, algebraic structure, probability, model of computation and automata.

SC 3210 **Programming Languages** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Computer programming languages on comparative basis with special consideration on syntax, semantics, and implementation, emphasizing on suitability of programming languages for various data manipulations and situations: exception handling, subroutines, visibility rules, concurrency and memory management.

SC 3211 **Operating Systems** **3 Credits**
Prerequisite: *SC 2220 Computer Organization*

Components and functions of operating systems, uniprogramming, multi-programming, multitasking, multithreading, resource management functions of operating systems, process scheduling algorithms, device management algorithms, virtual memory management, and classical problems related to operating systems such as deadlock, starvation and concurrency.

SC 3220 **Computer Architecture** **3 Credits**
Prerequisite: *SC 2220 Computer Organization*

Computer system components, combinatory circuits, sequential circuits, micro-operations using flip-flop, registers, adder and counter, computational operations and control of micro-operations, design of memory unit, design of set of instructions, design of parallel processing as well as SISD, SIMD, MISD, and MIMD architectures.

SC 3230 **Theory of Computation** **3 Credits**
Prerequisite: *SC 2231 Mathematics Foundation for Computer Science*

Methods of computation, sequential computation, parallel computation, logic circuits, finite-state machine, deterministic and non-deterministic machine, regular and non-regular set, push-down automata, Turing machine, computability and non-computability, halting problem, examples of class P and class NP problems, theories and techniques for various computational problems which are the basis of computer science.

SC 3231 **Algorithms Design** **3 Credits**
Prerequisites: *SC 2231 Mathematics Foundation for Computer Science*

Techniques for designing algorithms using divide and conquer, greedy method, dynamic programming and backtracking by emphasizing on analysis of efficiency, design techniques for NP problem domain.

SC 3320 **Digital System Design** **3 Credits**
Prerequisite: *SC 2220 Computer Organization*

Use of Boolean functions in designing the combinatory and sequential circuits, flip-flop, counter, and registers, integrated circuits, Large Scale Integration (LSI), Very Large Scale Integration (VLSI), design of various types of circuits used in computer systems such as adder, subtractor, multiplier, and divider circuits as well as other appropriate circuits.

SC 3351 **Computer Networks** **3 Credits**
Prerequisite: *SC 2220 Computer Organization*

Basic knowledge of computer network, data communication, transmission media, and communication devices, fundamentals of network design, network topology, multi-layer protocols, routing machines, circuit switching, packet switching, and message switching, case studies of computer networks such as ARPAnet, and Local Area Network.

SC 4299 **Senior Projects** **3 Credits**
Prerequisite: *Fourth-year student status with at least 100 credits completed*

Specific project which requires students to design and develop a concrete program or system, analyze the problem, define the solution and design the system by applying the various computer science concepts. The advisor whom the students select will guide them throughout the project development. The students must give presentation which includes oral examination.

SC 4310 **Software Engineering** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Software life cycle, analysis of requirements, structured software design, development, implementation, testing, and maintenance of software, reusable software, documentation and software manuals, and software project management.

SC 4311 **Computer Graphics** **3 Credits**
Prerequisite: *SC 2211 Data Structures and Algorithms*

Fundamental concepts of graphics construction using computer, data structure for computer graphics and techniques for creating, storing, transformation, translation, rotation, clipping, and animation, use of commercial graphics packages and use of high-level languages to write computer graphics programs.

SC 4312 **Compiler Construction** **3 Credits**
Prerequisite: *SC 2211 Data Structures and Algorithms*

Structure of compilers, steps of execution of compiler, symbol table, lexical analysis, semantic analysis, internal forms for program, run time storage management, code optimization, implementation of simple compilers or portion of compilers such as parser.

SC 4320 **Introduction to Microprocessors** **3 Credits**
Prerequisite: *SC 3320 Digital System Design*

Introduction to microprocessor technology, evolution of microprocessor, microprocessor architecture and functions, typical 8, 16, and 32 bit microprocessors as well as different kinds of commercially available microprocessors.

SC 4321 **VLSI Technology** **3 Credits**
Prerequisite: *SC 3320 Digital System Design*

Very Large Scale Integration circuits and different design techniques including automatic design method, impact of VLSI technologies in computer systems.

SC 4330 **Numerical Analysis** **3 Credits**
Prerequisite: *SC 2231 Mathematics Foundation for Computer Science*

Analysis of precision levels in numerical computations, algorithm constructions for mathematical problem-solving such as finding roots of various equations, interpolation, differentiation and integration, finding of terms and sum of series with emphasis on the writing of programs to solve complex numerical problems.

SC 4331 **Formal Languages and Automata** **3 Credits**
Prerequisite: *SC 3230 Theory of Computation*

Fundamental mathematical theories related to languages and grammars, deterministic and non-deterministic finite automata, pushdown automata, linear bounded automata, Turing machines, regular languages, context-free languages, context-sensitive languages, recursive languages, closure problems of languages, concepts of effectiveness, undecidability and computational complexity.

SC 4332 **Artificial Intelligence Concepts** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Fundamental concepts in AI and its purpose as well as different disciplines in the field, mathematical theorem proving, natural language processing, image processing, robotics, expert system and various techniques used in knowledge representation, searching, induction and heuristic algorithms, case studies related to specific AI applications including expert system, language translation, voice processing, and others, use of popular programming languages such as Prolog and LISP to solve AI related problems.

SC 4333 **Systems Analysis and Design** **3 Credits**

Roles and importance of information system in organizational structure with regard to strategic planning and decision making, relationship among different information systems within an organization and role of computer systems in information system, various computer technologies which can be used to implement information systems as well as efficient management of information system to meet the various needs of different levels of organizational hierarchy.

SC 4340 **Neural Network** **3 Credits**

Basic neural network architectures and learning rules, with extensive coverage of performance learning, including the Widrow-Hoff rule, backpropagation and its enhancements, recurrent associative memory networks, and competitive networks, mathematical analysis of networks, training methods, implementation and applications.

SC 4341 **Machine Learning** **3 Credits**

Construction of computer programs that will automatically improve their performance through experience, primary approaches to machine learning, including inductive inference of decision trees, case-based learning, neural network learning, statistical learning methods, and Bayesian learning.

SC 4352 **Image Processing** **3 Credits**
Prerequisite: *SC 2211 Data Structures and Algorithms*
or *IT 2230 Information Structures*

Introduction to digital image processing including such topics as digital image representation, compression techniques, coding techniques, analysis of images represented in different formats, as well as optical character recognition techniques based on image processing to recognize Thai and English alphabetic.

SC 4370 **Object-Oriented Concepts** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Different software development methods emphasizing on object oriented methods, fundamental concepts of object oriented programming, inheritance, polymorphism, encapsulation, object oriented programming tools, class libraries, application development using object oriented concept, analysis and design of object-oriented data architecture.

SC 4371 **Selected Computer Language** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Advanced computer programming language which is considered to be widely used in the software development industry.

SC 4372 **System Programming** **3 Credits**
Prerequisite: *SC 3211 Operating Systems*

Characteristics of batch processing, compilation, linking, loading and execution of programs in relation to system libraries, I/O subroutines, direct and indirect addressing methods, relocation of memory space, register addressing of operating systems, compilers, interpreters and database systems, implementation of simple system program using assembly and/or C language.

SC 4373 **Web Application Development** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Hypertext Markup Language (HTML) or dynamic HTML (DHTML), scripting language, such as Visual Basic Scripting Edition or Microsoft Jscript®, knowledge and skills required to develop web application using n-tiers architecture, designing, building, and deploying web application

SC 4374 **Enterprise Application Development** **3 Credits**
Prerequisite: *SC 2212 Database System*

Architecture and platform of choice for building and deploying n-tier, web-based, transactional, and component-based enterprise applications, high-level overview of enterprise application architecture, individual programming API's and technologies that constitute at Web tier and business tier, security, persistence, transaction.

SC 4375 **3D Graphical Programming** **3 Credits**
Prerequisite: *SC 2101 Computer Programming II*

Technologies on 3D Graphical Programming, process involved and program 3D graphical applications

SC 4381 **Computer and Information Security** **3 Credits**
Prerequisite: *SC 3351 Computer Network*

Information security that is practically implemented into organizations, attacks, threats, hackers techniques, information security risk, information security process, security technologies, policies, wireless security and legal issues of information security.

SC 4390 **Seminar in Computer Science** **3 Credits**
Prerequisites: *Senior students with the consent of the instructors*

Seminar on topics in advanced or new technology in the field of computer science. An expert or professor in the specific field may be invited to give lectures. Each student must study some specific topics, make presentation and exchange questions with the others.

SC 4400 - 99 **Selected Topics** **3 Credits**
Prerequisite: *Senior students with the consent of the instructors*

Special topics that are appropriate for detailed study and research. The topic selected depends on the student's needs and the instructors' requirements and is in accordance with the current change of computer science in that period.

TE 3000 **Principles of Communications** **3 Credits**
Prerequisite: *BG 2209 Statistics for Engineers*
EE 2203 Signal and Systems

Introduction to signal and system, spectrum of signal and applications of Fourier Series and transform, analog modulation, AM, DSB, SSB, FM, NBFM, PM, noise in analog communication, binary baseband modulation, Nyquist's sampling theory and quantization, pulse analog modulation, pulse code modulation (PCM), delta modulation (DM); multiplexing, time-division multiplexing (TDM), introduction to transmission lines, radio wave propagation, microwave components and satellite communications, and optical communication.

TE 3002 **Communications Laboratory** **1 Credit**
Prerequisite or Co-requisite: *TE 3000 Principles of Communications*
or *TE 3003 Fundamentals of Communication Systems*

Laboratory studies to help students better understand the theory of communications, i.e. signal analysis, modulation techniques, and noise effects, etc. Students can also gain technical experiences about some useful devices and measurements in the field.

TE 3102 **Communication Networks and Transmission Lines** **3 Credits**
Prerequisite: *EE 2201 Electric Circuits*
EE 3301 Electromagnetic Fields

Network theorems; analysis and design of equivalent one-port and two-port, series and parallel resonance, multiple resonance, wave filters; impedance transformation and matching networks; network approach to theory of transmission line; telephone lines; utilization of transmission lines for impedance matching.

TE 3301 **Radio Wave Propagation** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*

Ground wave propagation; sky wave propagation; space wave propagation; narrow band fast fading; wide band fast fading; cellular propagation.

TE 4105 **Microwave Engineering** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*

Microwave transmission lines, s - parameters; microwave network analysis, microwave resonators, power dividers and directional couplers, microwave filters, microwave systems and applications, microwave measurement.

TE 4107 **Digital Telephony** **3 Credits**
Prerequisite: *TE 3000 Principles of Communications*
or *TE 3003 Fundamental of Communication Systems*

Analog network Hierarchy, digital voice networks, voice digitization PCM-DPCM-Delta, asynchronous and synchronous transmission, LINE coding, TDM, Space and Time division switching, BORCHT, digital modulation MA-FSK-PSK-QAM-TCM Integrated Services Digital Networks ISDN.

TE 4108 **Digital Communication** **3 Credits**
Prerequisite: *TE 3000 Principles of Communications*

Review of sampling theorem; probability and random processes; line coding and pulse shaping; signal detections; digital modulation techniques; performance analysis; introduction to information theory; source coding; channel coding.

TE 4110 **Wireless Communications and Cellular Systems** **3 Credits**
Prerequisite: *TE 3000 Principles of Communications*

Overview of wireless communication systems and applications; background in physical layer for wireless communication systems; models for wireless communication channels, path loss models, shadowing models, Rayleigh fading channels, multipath fading channels; diversity techniques for fading channels; multiple access techniques; introduction to cellular mobile systems; cellular network design principles; wireless communication standards.

TE 4111 **Antenna Engineering** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*

Basic definitions and theorems; isotropic point source; power and field patterns; directivity and gain; Radiation impedance; wave polarization; radiation from current elements; radiation properties of wire antenna; linear array antenna; Uda-Yagi antenna and log-periodic antenna; aperture antenna; microstrip antenna; antenna measurement.

TE 4112 **Optical Communications** **3 Credits**
Prerequisite: *EE 3301 Electromagnetic Fields*
TE 3000 Principles of Communications
or *TE 3003 Fundamental of Communication Systems*

Cylindrical dielectric waveguides and propagating conditions; structure and types of optical fiber; optical fiber parameters; optical fiber production; optical cable types; signal degradations in optical fiber; optical sources; modulation techniques; optical detectors; optical receivers; optical repeaters and amplifiers; optical components; link budget calculations.

TE 4201 **Communication Electronics** **3 Credits**
Prerequisite: *EE 2603 Electronic Circuit Analysis*
or *EE 2605 Engineering Electronics*

Design of radio-frequency amplifiers, signal amplifier, power amplifier, oscillator, wide-band amplifier, impedance matching, design techniques and equipment selection, special conditions in design

TE 4202 **Communication Electronics Laboratory** **1 Credit**
Prerequisite or Co-requisite: *TE 4201 Communication Electronics*

Laboratory work to be done according to TE 4201 Communication Electronics Laboratory

TE 4203 **Noise in Electronic Systems** **3 Credits**
Prerequisite: *EE 3601 Electronic Circuit Design*

Noise, noise protection in conductor, capacitive and inductive effects of conductor, effects of component magnetic fields, line twisting noise protection, grounding of electronics system, noise protection in amplifier, external noise, types of cables and links, noise equilibrium, cascade of passive networks, corrosion protection of contact surfaces, design of printed circuit board.

TE 4204 **Optoelectronics** **3 Credits**
Prerequisite: *EE 2603 Electronic Circuit Analysis*
or *EE 2605 Engineering Electronics*
and *EE 3301 Electromagnetic Fields*

Units of light measurement, optical fiber, wave guide, light sources, and semiconductor light detector, liquid crystal, optical transmission and reception, optical integrated circuits.

TE 4901 **Telecommunication and Electronic Engineering Project I** **1 Credit**
Prerequisite: *Completion of 100 credits*

Study and development of project in Telecommunication and Electronics Engineering. Student must submit reports at the end of the semester.

TE 4902 **Telecommunication and Electronic Engineering Project II** **2 Credits**
Prerequisite: *TE 4901 Telecommunication and Electronic Engineering Project I*

Continuation of the project done in Telecommunication and Electronics Engineering Project I. Report is also required at the end of the semester.

TE 4903 **Advanced Topics in Telecommunication and Electronic Engineering** **3 Credits**
Prerequisite: *Completion of 90 credits with the consent of the chairperson*

Topics of current interest and new developments on Telecommunication and Electronic Engineering

TE 4904 **Special Problems in Telecommunication and Electronic Engineering** **3 Credits**

Prerequisite: *Completion of 90 credits with the consent of the chairperson*

Investigation of special problems assigned by the instructor with the consent of the chairperson: a written report is required.

TH 1500 **Introduction to Thai** **3 Credits**

Basic language used in everyday life, basic listening, speaking, pronunciation skills, grammatical forms of primary importance, reading short sentences and writing words

TH 1501 **Thai Language I** **3 Credits**

Prerequisite: *TH 1500 Introduction to Thai*

Listening and speaking skills in a variety of circumstances in everyday life to broaden basic vocabularies and grammar, reading simple texts, and writing short sentences

TH 2501 **Thai Language II** **3 Credits**

Prerequisite: *TH 1501 Thai Language I*

Complex grammatical structure, reading texts and dialogues concerned with everyday life and practice of writing essay

TH 2502 **Thai Language III** **3 Credits**

Prerequisite: *TH 2501 Thai Language II*

Advanced grammar structure, reading texts and dialogues concerning Thai life and culture and practice of writing short articles

TH 3501 **Advanced Reading** **3 Credits**

Prerequisite: *TH 2502 Thai Language III*

Development of reading skills, main ideas finding, facts and opinions analysis, author's viewpoint and intention analysis.

TH 3502 **Advanced Thai Writing** **3 Credits**

Prerequisite: *TH 2502 Thai Language III*

Development of writing skills, styles in the present-day Thai language both formal and informal, writing for presenting the viewpoint, analysis of effective writing, and practice various writings

TH 3503 **Advanced Reading and Writing** **3 Credits**

Prerequisite: *TH 2502 Thai Language III*

Main ideas finding, facts and opinions analysis, author's viewpoint and intention analysis, development of writing skills, styles in the present-day Thai language both formal and informal.

TS 1201 **Physics** **4 Credits**

Basic physics, mechanics, electricity and magnetism, thermodynamics and statistical physics, atomic and molecular physics, nuclear physics, physical properties of gases, liquids, solid state and amorphous materials, polymers.

TS 2222 **Introduction of Circuits and Electronics** **4 Credits**

Prerequisite: *TS 1201 Physics*

Fundamental principles of electric circuits, practical electronics, digital logic and instrumentation systems, measurement of circuit phenomena, construction of amplifiers and filters, logic circuits, D/A and A/D converters and use of sensors and transducers.

TS 2231 **Mathematics for Telecommunications** **3 Credits**

Prerequisite: *DA 2102 Calculus II*

Fundamental of differential equations, various transform theories and their applications to communications, matrices and linear systems of equations, probability and statistic theory in communication signals and systems, numerical methods and complex analysis.

TS 2242 **Communication Signal and Systems** **4 Credits**
Prerequisite: *TS 2231 Mathematics for Telecommunications*

Various types of signals, i.e. discrete-time signal, continuous-time signal, and noises in communication systems, basic concepts of signal transmission in various communication systems, various transformations of signals in time and frequency domain, classical and modern modulation techniques, various types of filters, general concepts on causality and stability in designing linear time-invariant systems.

TS 3230 **Telecommunications System and Technology** **3 Credits**
Prerequisite: *IT 2231 Information Technology*

Introduction to various telecommunication systems and networks, radio and cable communication systems, basic concepts of analogue and digital communications, optical fiber, satellite, computer networks and communication protocols, and network security.

TS 3254 **Digital Communications** **4 Credits**
Prerequisite: *TS 2242 Communication Signal and Systems*

Basic concepts of digital signal and noise in communication systems, various types of multiplexing techniques, digital modulations, digital filters, effect of noise on modulated digital signal in communication channels, performance evaluation of digital modulation techniques based on bit error rate vs. signal-to-noise ratio graphs

TS 3256 **Computer Networks and Open Systems** **4 Credits**
Prerequisite: *TS 3230 Telecommunications System and Technology*

Fundamentals of computer networks, inter-operability issues, Open System Interconnection (OSI) reference model, protocol basics and network protocols i.e. Transmission Control Protocol/Internet Protocol (TCP/IP), various network media, prevailing network types and topologies, wire and wireless communication basics, Local Area Network (LAN) and Wide Area Network (WAN) technologies, network devices and their connectivity, basics of operating systems, basics of network security and advanced computer network technologies.

TS 3257 **Coding for Communications** **3 Credits**
Prerequisite: *TS 3230 Telecommunications System and Technology*

Basic concepts of signal/data transmission in communication systems, fundamental of information and coding theory, applications of information and coding theory in communication systems, various error control coding techniques.

TS 3332 **Switching and Signaling Systems** **3 Credits**
Prerequisite: *TS 3230 Telecommunications System and Technology*

Principles and history of the public switched telephone network, signaling and intelligent network and its interoperability to provide telephone services, comparison of switching paradigms and evolving infrastructure, and the future of telephony.

TS 3338 **Cryptography and Data Security** **3 Credits**

Modern cryptography which includes fundamental cryptographic primitives of public key encryption, digital signatures, authentication, identification and pseudo-random number generation.

TS 3339 **Introduction to Electromagnetic Field** **3 Credits**
Prerequisite: *TS 2231 Mathematics for Telecommunications*

Introduction to electric and magnetic fields, electric charge and current, Maxwell's equation, wave equations and characteristics of waves in various media, and principles of antenna and guided wave.

TS 3350 **Analog Communications** **3 Credits**
Prerequisite: *TS 2242 Communication Signal and Systems*

Frequency domain and time domain response of linear systems, analog modulation methods including amplitude modulation, frequency modulation and phase modulation, signal and noise modeling using probabilistic descriptions, narrow band random processes and performance of analog modulation techniques in the presence of noise, and design of communication links.

TS 3357 **Computer Application in Telecommunications** **3 Credits**
Prerequisite: *TS 3230 Telecommunications System and Technology*

Telecommunications applications for computer hardware and software, consideration of human factors, policy and application in consumer, business and research sectors of telecommunications industry.

TS 3359 **Probability and Queuing Theory** **3 Credits**
Prerequisite: *DA 2203 Probability and Statistical Methods*

Probability and random process in telecommunications, distribution of several random variables in telecommunications, distribution functions, queuing theory, classification of queue, priority queuing, computer time sharing and multi-access systems.

TS 4255 **Wireless Communication Systems** **4 Credits**
Prerequisite: *TS 3257 Coding for Communications*

Overview of wireless communication concepts, propagation models, interferences, noises, multipath and fading, modulation and multiple access techniques, spread spectrum techniques, fundamentals of cellular communications concepts and design, cellular data networks, and wireless protocols and standard.

TS 4261 **Internetworking Workshop I** **4 Credits**

Fundamentals of internetworking connectivity concepts, components and protocols (i.e. flow control protocols, error checking mechanisms, and routing protocols), data encapsulation, network addressing, Local Area Network (LAN) technologies, basic LAN design and implementation, and basic network devices configurations.

TS 4262 **Internetworking Workshop II** **4 Credits**
Prerequisite: *TS 4261 Internetworking Workshop I*

Design and implementation of small to medium size Local Area Networks (LANs) emphasizing LAN switching concepts, protocols, features and technologies and LAN switch configuration, introduction to Wide Area Network (WAN) technologies, encapsulation protocols, design and implementation, hands-on experiences in adding network security, and efficiently uses of IP network services.

TS 4299 **Senior Project** **3 Credits**
Prerequisite: *Fourth-year student status with at least 100 credits completed*

Specific project which requires students to apply the knowledge they have studied to design and develop as well as to conduct research in telecommunications system. Students must apply their analytical and decision making skills based on scientific methodology and creativity in developing telecommunications projects. The instructors will advise them throughout the project development. Students will have an oral examination on their projects.

TS 4332 **Economics in Telecommunications Systems** **3 Credits**

Inventory concepts, asset amortization, liabilities, consolidated statements, cost accounting, capital budgeting, and investment decisions.

TS 4333 **Telecommunications Policy, Law, Regulation and Standard** **3 Credits**

Systematic interdisciplinary analysis of major public and private telecommunications policies applying tenets from law, political science, economics, communication, general social science and technology, domestic and international regulation.

TS 4335 **Network Management and Controls** **3 Credits**
Prerequisite: *TS 3256 Computer Networks and Open Systems*

Standard-based protocols for management of telecommunications networks, Simple Network Management Protocol (SNMP) and common management information protocol, and extensions of present protocols to optimize network performance.

TS 4336 **Operation Research** **3 Credits**
Prerequisite: *DA 2102 Calculus II*

Linear programming problems and its dual, simplex method, transportation and warehouse problems, computer algorithms and applications to various fields, optimization theory, integer programming; Pert (CPM), non-linear programming, dynamic programming and game theory.

TS 4352 **Satellite Communication Systems** **3 Credits**
Prerequisite: *TS 3257 Coding for Communications*

Fundamentals of microwave communication, satellite communication system architecture, orbit ring of communication satellite, propagation delay and interference of noise in satellite communication system, and design of satellite systems

TS 4353 **Voice and Data Integration** **3 Credits**
Prerequisite: *TS 3230 Telecommunications System and Technology*

Methods of data transmission and switching over Wide Area Network telecommunications facilities, voice digitization techniques, architecture and evolution of the digital telecommunications network and design of integrated voice and data networks.

TS 4355 **Multimedia for Communications** **3 Credits**
Prerequisite: *TS 3257 Coding for Communications*

Various types of media in communication systems, basic concepts of data and media compression, various standards for signal compression, transmission of uncompressed/ compressed signal in communication systems, effects of transmission error.

TS 4356 **Network Design and Analysis** **3 Credits**
Prerequisite: *TS 3256 Computer Networks and Open Systems*

Overview of current network technologies, architectures and services, principles of network and internetwork analysis, design and implementation, analysis of user requirements, restrictions and design tradeoffs, conceptualization and evaluation of design.

TS 4357 **Cellular Mobile Systems** **3 Credits**
Prerequisite: *TS 4255 Wireless Communication Systems*

Basics of cellular mobile radio systems, propagation effects and spectral considerations, cellular mobile systems technologies, cellular network architecture and cellular system applications.

TS 4363 **Optical Fiber Communications** **3 Credits**
Prerequisite: *TS 1201 Physics*

Introduction to optical communication systems, types of optical fibers cable, attenuation and dispersion, basic optical components: connectors, splices and couplers, optical sources, optical transmitters, optical detectors, optical receivers, noise in optical fiber communication systems, digital optical fiber systems, BER performance, high-speed optical networks and its applications (WDM and DWDM).

TS 4365 **Antenna Systems and Design** **3 Credits**
Prerequisite: *TS 4368 Introduction to Electromagnetic Field*

Basic properties of transmitting and receiving antennas, antenna parameters, polarization of electromagnetic waves, antenna types, antenna arrays, adaptive antenna, broadband antenna design, and antenna measurements.

TS 4366 **Information Theory and Coding** **3 Credits**

Introduction to basic principles and fundamental concepts in information theory in the context of digital communication system, source coding and channel coding for reliable transmission of digital information, basic compression and error-control coding techniques.

TS 4367 **Introduction to Simulation for Telecommunications System** **3 Credits**
Prerequisite: *IT 2172 Programming Workshop*

Basic concepts and components of simulation models in communication systems and communication system modeling.

TS 4370 **Performance Evaluation of Telecommunication Systems** **3 Credits**
Prerequisite: *DA 2203 Probability and Statistical Methods*

Queuing theory for communication systems, workload characterization, communication network modeling, communications systems performance analysis, performance measurement techniques and monitor tools.

TS 4388 **Scalable Internetworking** **3 Credits**
Prerequisite: *TS 4261 Interworking Workshop I*

Knowledge and skills in designing, implementing, maintaining and troubleshooting today's complex enterprise networks, and discussion of secure networks and performance efficiency of networks.

TS 4389 **Network Security** **3 Credits**
Prerequisite: *TS 3256 Computer Networks and Open Systems*

Introduction to network security, security principles, network threats and countermeasures, network security protocols, technologies, tools/appliances (i.e. firewalls, IDS, IPS, IPSec, VPN), and audit, design, and implementation of secured networks.

TS 4390 **Seminar in Telecommunications** **3 Credits**
Prerequisite: *Fourth-year students and by the consent of the instructor*

Seminar in the advancement of telecommunications science or new research that may affect telecommunications theory. Experts in specialized areas from governmental or private sectors may be invited to lecture on specialized topics. Students may be organized into groups for special activities on interesting topics.

TS 4391 **Seminar in Information and Communication Technology** **3 Credits**
Prerequisite: *Fourth-year students and by the consent of the instructor*

Seminar in the use of ICT, principles of problem solving using ICT and applications of ICT, effects of their application when developing ICT solutions to problems, entrepreneurship regarding to various applications in ICT, advancement in telecommunication and ICT research that may affect information society. Experts in specialized areas from governmental or private sectors may be invited to lecture on specialized topics.

TS 4400-99 **Selected Topics** **3 Credits**
Prerequisite: *Fourth-year students and by the consent of the instructor*

Special topics in telecommunications science that are appropriate for detailed study and research. The topic selected depends on the students' needs and the instructors' requirements and is in accordance with the current change of telecommunications science.

VIS 1101 **Visual Communication Design I** **3 Credits**

An introduction to visual problem solving, marks, symbols, semiotics, simplification and translation in visual language.

VIS 2102 **Visual Communication Design II** **3 Credits**
Prerequisite: *VIS 1101 Visual Communication Design I*

Theory and practice in spatial composition, history of layout design as well as experimental design structures.

VIS 2103 **Print Production** **3 Credits**

Print production process for visual communication design from basic printing such as wood cut, silk screen to industrial printing of books, packaging and various types of media, printing process such as offset printing, Gravure Print, ink-jet, etc., pre-press process, print material, special technique in printing including printing subsidization.

VIS 2104 **Advanced Typography** **3 Credits**
Prerequisite: *ART 2010 Typography*

Expressive typography and deployment of type as visual literature, exploration of the typography design.

VIS 2105 **Visual Communication Design III** **3 Credits**
Prerequisite: *VIS 2102 Visual Communication Design II*

System in design, design problem analysis and its solution to business entity, corporate identity design, branding and advertising medias.

VIS 3106 **Sketch Design** **3 Credits**

Practice in 2 dimensional and 3 dimensional sketches with various techniques and medium, with focus on how to visualize idea coping with skill development such as structuring, shading, and shadowing into basic visual communication design sketch.

VIS 3107 **Visual Communication Design IV** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Confluent accessibilities of data and information, information design principles, history, design process, formats, analysis, experiments and advertising series.

VIS 3108 **Publication Design** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Desktop publishing applications, page layout, basic mechanical preparation for printing industry, characteristics of different publications such as catalog, annual report or magazine together with further exploration in the new emerging industry of digital media publication.

VIS 3110 **Visual Communication Design V** **3 Credits**
Prerequisite: *VIS 3107 Visual Communication Design IV*

Current climate of visual culture and its impact to our social movement, visual convergence of higher design sensibilities toward human conditions and advertising campaign.

VIS 3111 **Package Design** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Application of design and communication principles to package design and marketing goals including package design process, market and consumer analysis, materials, and packaging industry.

VIS 3112 **Typeface Design** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Principles of typeface design, classical typefaces and the analysis of typographic forms and proportions, the creation of the custom typefaces for professionalism and practical usage.

VIS 3409 **Idea-Generation Techniques** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Concept of creative idea, idea generated techniques, mind-mapping, brainstorming, concept development, executions, application in various medias.

VIS 3413 **Advertising Graphics** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Visual elements of effective advertisements, color application, typography, illustration, art direction, mood and tone, impact of visual composition, various kinds of medias.

VIS 3414 **Copywriting** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Principles of copywriting, analysis of information, structure of content, art of writing, persuasive techniques, applications in various media.

VIS 4115 **Design Management** **3 Credits**

Contemporary issues of the cultural, technological, and environmental influences of design, research methodology, design research, current brand identities, organizational management, and factors in the design industry.

VIS 4116 **Art Thesis I** **3 Credits**
Prerequisite: *VIS 3110 Visual Communication Design V*

Students are required to choose their own topics which have to be approved by the Thesis Committee. Students must complete the information gathering and analysis.

VIS 4117 **Signage System and Wayfinding Design** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Three-dimensional signage system and way finding, conceptual development, hands-on production of signage, way finding, working drawings, and 3D models.

VIS 4118 **Display and Exhibition Design** **3 Credits**
Prerequisite: *VIS 2105 Visual Communication Design III*

Application of graphics to 3-dimensional displays based on commercial objectives, function, creativity and beauty. Students will design several types of displays: P.O.P., kiosk, including exhibition and event design.

VIS 4121 **Self Promotion** **3 Credits**

Self promotion strategies, utilizing new technology, synthesis of media in the promotion of contemporary design work, preparation for the business aspects of a design career, portfolio and professional presentation techniques.

VIS 4122 **Art Thesis II** **6 Credits**
Prerequisite: *VIS 4116 Art Thesis I*

Students are required to continue their project and complete sketch designs following the information analysis from VIS 4116 Art Thesis I. Students must finish their final project and organize their Art Thesis Exhibition in public.

VIS 4123 **Individual Project** **3 Credits**

This course allows upper level students to delve into specific areas of study where their personal interests meet with instructors' expertise. Detailed studies may include integrated branding, public service, self promotion, motion graphic etc.

VIS 4124 **Book Binding** **3 Credits**

Methods of binding books with different materials, techniques and ideas by hand, process of how to become books or magazines for print production, such as perfect binding, flat back journal binding, cross side stitch or slab binding, pamphlet stitch binding, and sewing with four needles including process preparing the signatures to making many types of book covers.

VIS 4125 **Sketch Fashion Design** **3 Credits**

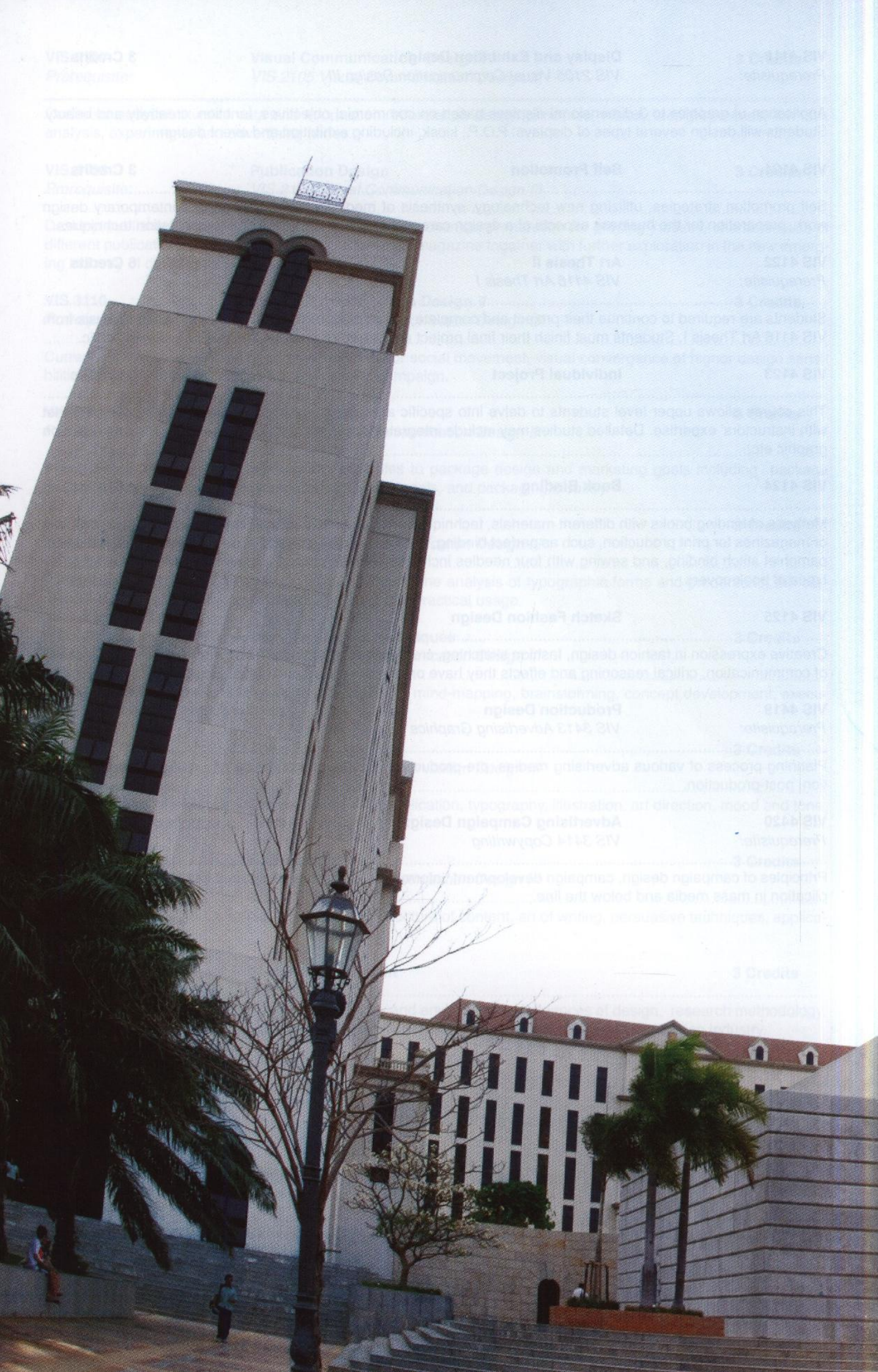
Creative expression in fashion design, fashion sketching, creative design, draping, and pattern drafting, importance of communication, critical reasoning and effects they have on this diversified and global industry.

VIS 4419 **Production Design** **3 Credits**
Prerequisite: *VIS 3413 Advertising Graphics*

Planning process of various advertising medias, pre-production, 2 dimensional media and motion picture production, post-production.

VIS 4420 **Advertising Campaign Design** **3 Credits**
Prerequisite: *VIS 3414 Copywriting*

Principles of campaign design, campaign development, information analysis, concept and design development, application in mass media and below the line.





ADMISSION SCHEDULE 2013

GENERAL ADMISSION SCHEDULE

ACADEMIC YEAR 2013

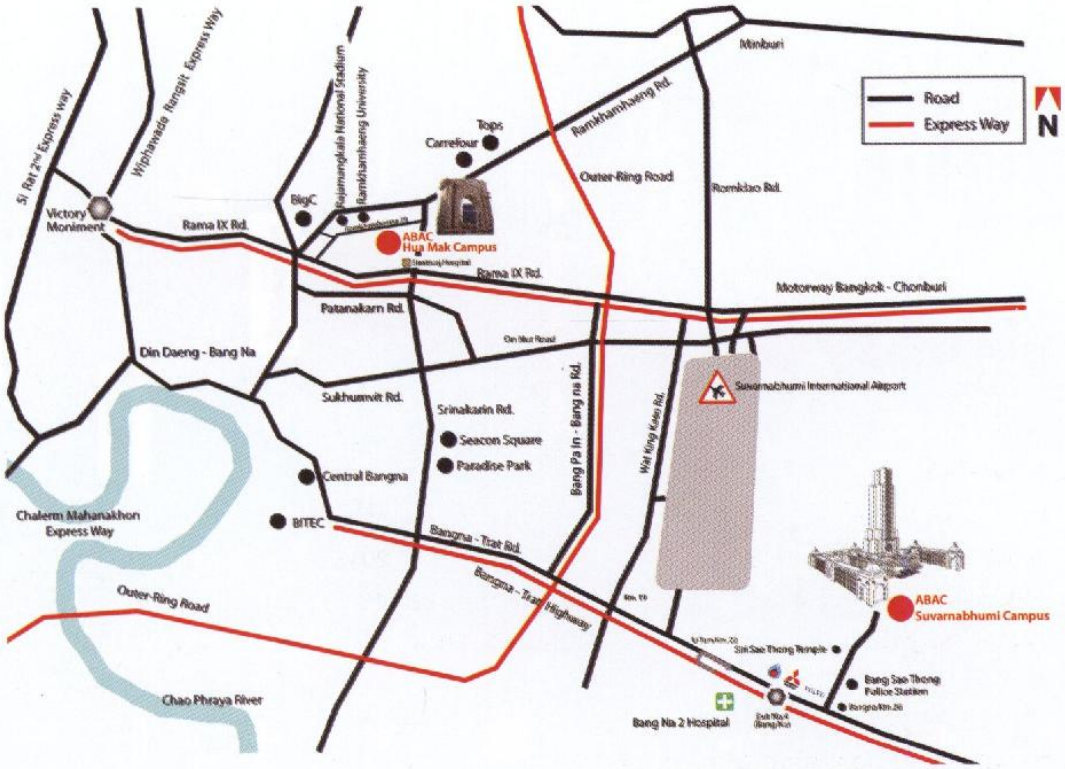
June 2013 Semester (561XXXX) Semester 1/2013	
Application forms Available	November 1, 2012 - March 8, 2013
Examination Date	On Application Date
Examination Results	
Intensive courses Registration	March 12-15, 2013
Intensive courses	March 18 - April 9, 2013
Registration Period	May 15-17, 2013
June Semester Begins	May 27, 2013
January 2014 Semester (564XXXX) 2/2013	
Application forms Available	September 2 - October 29, 2013
Examination Date	On Application Date
Examination Results	
Intensive courses Registration	October 31 - November 1, 2013
Intensive courses	November 4 - 28, 2013
Registration Period	December 26 -28, 2013
January Semester Begins	January 6, 2014

INTERNATIONAL ADMISSIONS

For students returning from abroad or Non-Thai High School

ACADEMIC YEAR 2013

August 2013 Session (562XXXX) in between Semester 1&2/2013	
Application forms Available	June 3 - July 25, 2013
Placement Test	On Application Date
Placement Test Results	
Registration Period	July 29, 2013
August Session Begins	August 1, 2013
October 2013 Session (563XXXX) In between Semester 1&2/2013	
Application forms Available	August 5 - October 4, 2013
Placement Test	On Application Date
Placement Test Results	
Registration Period	October 12, 2013
October Session Begins	October 24, 2013
March 2014 Session (565XXXX) Semester 2/2013	
Application forms Available	January 6 - February 25, 2014
Placement Test	On Application Date
Placement Test Results	
Registration Period	March 3, 2014
March Session Begins	March 10, 2014



ASSUMPTION UNIVERSITY

Hua Mak Campus
592/3 Ramkhamhaeng 24,
Hua Mak, Bangkok Thailand 10240
Tel. (662) 719-1919
Fax. (662) 719-1509

Suvarnabhumi Campus
88 Moo 8 Bang Na-Trad Km. 26
Bangsaothong, Samuthprakarn
Thailand 10540
Tel. (662) 723-2222
Fax. (662) 707-0408

ABAC City Campus
Zen Courses Store
@ CentralWorld, 14th flr., 4, 4/5
Rajdamri Road, Phatumwan
Bangkok 10330
Tel. (662) 100-9115 - 8
Fax (662) 100-9119