International Technological University

2009-2010

Student Handbook

This publication is an announcement of the current programs and course offerings of International Technological University. It is intended for information only and is subject to change without notice. Courses, faculty assignment, prerequisites, graduation or completion requirements, standards, tuition and fees, and programs may be changed from time to time. Courses are not necessarily offered each term or each year.

International Technological University retains the exclusive right to judge academic proficiency and may decline to award any degree, certificate, or other evidence of successful completion of a program, curriculum, or course of instruction based thereupon. While some academic programs described herein are designed for the purposes of qualifying students for registration or certification, successful completion of any such program in no way assures registration or certification by any agency.

State of California Department of Consumer Affairs Private Post Secondary and Vocational Educational Information approved International Technological University to offer the programs listed in the catalog in accordance with the provisions of California Education Code(s) 94900 and 94915. ITU obtained its re-approval by the State of California Department of Consumer Affairs on January 1st, 2006, effective to December 31 2009.

International Technological University has applied for Eligibility from the Senior College Commission of the Western Association of Schools and Colleges. WASC has reviewed the application and determined that International Technological University is eligible to proceed with an application for Candidacy for Accreditation. A determination of Eligibility is not a formal status with the Accrediting Commission, nor does it assure eventual accreditation; it is a preliminary finding that the institution can be potentially accredited and can precede within three years of its Eligibility determination to be reviewed for Candidacy status with the Accrediting Commission. Questions about Eligibility may be directed to the institution or to WASC at wascsr@wascsenior.org or 510.748.9001.

International Technological University

Student Handbook
2009-2010

International Technological University
756 San Aleso Avenue
Sunnyvale, CA 94085, USA
Toll Free: (888) 488-4968
Main: (888) 488-4968
Fax: (408) 331-1026
http://www.itu.edu

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A Message from the President

Today, interdependency among nations is a working reality. Global developments in communications and technology mark the dynamic, changing nature of socioeconomic and political relations among nations. International cooperation is now a prerequisite of any large-scale business operation, and absolutely necessary to maintain competitiveness and survivability. Individuals educated to think and work with an international consciousness are best equipped to lead in our new global neighborhood.

We should have a greater understanding of this new global network. It is in the spirit of global vision combined with the recognition that modern technology is the bonding power among nations. Hence, I present to you a model for the future of international education. Combining this cooperative vision with the latest research in science, technology and management, **International Technological University** (ITU) will continue to make major contributions to the fields of development, environmental protection and international cooperation.

The location of ITU is unique. The state of California combines the richest resources with the most congenial conditions available in the United States. Silicon Valley is the capital of the world's hi-tech industry. Stretching along the south shores of the San Francisco Bay, it is blessed with a superb climate, major universities, and a rich cultural and historical heritage. It is a hub of the American West, an international trade center, and a gateway to the Pacific and the world.

The United States created and is the present leader in the high-technology revolution. However, there is no guarantee that the U.S. will maintain dominance in this field. In recent years, Asia and particularly China has emerged as a major contributor in the modern world of high technology. If the U.S. is determined to maintain its present position, it must take the lead in harnessing the technological developments overseas as well as create a new hi-tech culture that fosters the exchange of technological development for the benefit of all citizens of our world. With this understanding, China will be a major partner and beneficiary of ITU's research, development, and production. Furthermore, in their efforts to market technology, Asian countries will find in ITU a vital resource for their continued development and modernization.

We are now in the new millennium with the challenge of solving contemporary problems while achieving the unfinished agenda of the future. Modern society must engage in a constant search for the good in its quest for the better. International Technological University is dedicated to excellence in global education and leadership for the twenty-first century.

Professor Shu-Park Chan, Ph.D.
Founder and President

INTERNATIONAL TECHNOLOGICAL UNIVERSITY

Philosophy & Vision

ITU Global Vision

International Technological University is a materialization of the educational ideals of the 21st century. ITU embraces the belief that technological advances in communication, transportation, and trade have made cross-cultural interaction and cooperation inevitable and desirable. The University plays a special international role by attracting international talent (students, professors, industry innovators and entrepreneurs), identifying their particular cultural strengths and needs, and matching those elements together into optimally functional teams to push forward technological advancement on a global basis.

Silicon Valley Leader

Silicon Valley has changed the face of the world with technological innovation married with startup funding. We are the world's capital for microelectronics, software development, internet & computing industries, biotechnology as well as the financing of these entrepreneurial ventures. Now with the exploding growth of the $20 billion world-wide game development industry and the establishment of Lucas Films in San Francisco, Hollywood-styled media entertainment and game creation are powerful forces injected into Silicon Valley's landscape. ITU's founders, executive team and faculty are the pioneers and top innovators in all of these fields. These technology, business, media and venture capital leaders have gathered together with a shared vision for globalization and created ITU, a model of educational excellence that defines the hi-tech, media and business future for the Silicon Valley and the rest of the world.

Innovative Education

ITU recognizes that the engineering profession has outgrown the existing model of academic education. The present academic model is based on the classical science curriculum. This model sets a solid foundation of theoretical knowledge, but it is slow to innovate and lacking in practical application. Classical academic curriculum requires only a limited exposure to laboratory work. However, like biotech research, medicine and law, engineering is a profession requiring a significant level of hands-on experience for competence. In the industry, engineers are very often confronted with problems characterized by a lack of complete information, as opposed to the neatly defined textbook problems taught in schools.

Application Oriented Training

There is a "relevance gap" between the theory taught in present day engineering education and the practical realities of industry. As a result, the tremendous resources typically found in educational institutions—intellectual excellence, a virtual "think-tank" research environment, an abundance of low-cost and highly innovative talent, a captive "test-bed"

population of students— is wasted. Thus, a new model for engineering and business education is required, where a marriage between theory and practice is achieved. ITU has introduced this model based on
 a flexible, cross   disciplinary curriculum   designed to meet the needs of top
- Caliber engineering, business and digital arts students interested in the hi-tech entrepreneurial environment.

ITU PHILOSOPHY & VISION (CONT'D)

Consilience: The Convergence of Disciplines
       The Silicon Valley has observed the merger of expertise across engineering fields as well as across seemingly unrelated industries. No hardware chip is created today without absolute dependence on CAD software programs. The best hardware development companies are thus housed with electrical engineers with a deep understanding of the nature of software design.   Similarly, biotech and pharmaceutical companies now invent drugs and new molecules using computer based bioinformatics programs that efficiently replace the test-tube process of laboratory experimentation. Life science students interested in a career in biology are therefore best served with at least a minimal dose of software engineering theory and application. The film entertainment field, well known for flashy special effects, has pushed the envelop of computer simulation technology, crossing over to pioneer real-time, non-intrusive 3D heart modeling for cardiac hospital patients. Heart attacks are now prevented and lives saved by discoveries made by Hollywood special effects engineers and artists. These dramatic developments reflect the consilience of knowledge across disciplines in the new world in which we now live.

Cross Disciplinary Curriculum
       ITU Founders pioneer these changes, both in academic research and in hi-tech startup creation in the Silicon Valley. ITU curriculum therefore actively promotes cross-disciplinary study for all students. Business students are encouraged to take computer engineering courses—like IT Security— furnishing the knowledge base every corporate business must have to "secure" their bottom line. Electrical Engineering students are encouraged to take performance art courses—like acting—to raise their communication skills. These "soft skills" are absolutely essential to their future success in breaking into management positions from their technical engineering roots. In the Silicon Valley, the failure of most startup hi-tech companies is due to a lack of effective marketing expertise, despite advanced proprietary technology. At ITU, our hi-tech entrepreneurial MBA program offers a focus in multimedia marketing, which includes optional production classes in animation, digital film and e-commerce production. By combining the best of modern application technology and the newest thinking in consilience science, the structure of ITU's curriculum facilitates cross-fertilization between engineering, business marketing, media production and individual performance excellence.

Silicon Valley Based China Focus
       The Silicon Valley sits on the Pacific Rim and has long served as America's window to China and other Asian countries. Since many of the founding members of ITU are hi-tech entrepreneurs with Chinese origins

and continue to influence and do business in Asia, ITU has a natural connection and strong desire to bring the most advanced technology and the American educational model to benefit China's emerging culture and economy. Within the next few years, ITU will expand its program offerings in China and contribute to the quickly changing educational infrastructure there, reflecting the best of both Chinese and American traditions. With this open invitation, we invite you to join ITU in this noble and exciting mission.

ITU PHILOSOPHY & VISION (CONT'D)

ITU is a non-profit organization incorporated in the State of California under International Technological University Foundation. It is treated as a publicly supported organization and is governed by its Board of Trustees. ITU does not discriminate on the basis of race, color, national and/or ethnic origin, sex, marital status, sexual orientation, handicap/disability, religion, veteran's status, or age in the administration of any of its educational policies, admission policies and programs, as well as employment-related policies and activities.

Statement of Mission, Purpose, and Objectives

The *mission* of International Technological University (ITU) is to provide superior undergraduate, and graduate education programs in the fields of engineering, international business, media/entertainment, health and individual performance. ITU offers an Associate of Arts (AS) in Business Administration, Associate of Science in Business Administration, Bachelor of Science in Business Administration and Bachelor of Arts in Business Administration. ITU offers a Bachelor of Science (BS) degree program in Computer Science (CS) and an additional option to focus on Multimedia Marketing & Performing Arts. ITU also provides graduate degree programs at the master's level in Computer Engineering (CE), Electrical Engineering (EE), Software Engineering (SE), Bio-Management (BM), Health Care Management (HCM), Industrial Management (IM), Digital Arts, Engineering Management, Computer Science, and Bio-Pharmaceutical Sciences. ITU also offers Master's of Business Administration (MBA) with various concentrations such as Accounting, Finance, Human Resource, Information Systems Management, International Business, Management, Marketing, General MBA, Executive MBA, Hospitality and tourism Management. ITU provides Ph.D. programs in Electrical Engineering and Software Engineering and a Doctorate of Business Administration program. ITU also offers English as a Second Language (ESL) to students who require additional language training.

The purpose of ITU is to foster excellence in education for students who are particularly interested in the hi-tech entrepreneurial field. All programs offered by ITU have an applied nature with emphasis on a few specialty areas tailored particularly to the market needs of companies in Silicon Valley. Students are actively encouraged to affiliate or intern with relevant local industry from the very beginning of their academic studies as an integral part of ITU's academic pedagogy. The institutional outcomes of

ITU include the following:

·   Ensure a strong application component to include relevant internships are integrated into each program from the beginning.

·   Ensure special focus is given to practical engineering, business, biotech, and media arts research projects.

·   Ensure the programs and courses are designed to support both full-time and part-time students.

·   Ensure courses are created at the speed of newly developing technological innovations and advances in the Silicon Valley.

·   Ensure courses are designed systematically, are competency-based, and utilize innovative instructional methods.

·   Ensure proficiency in public speaking and technical writing is an integral part of degree requirements.

·   Ensure that the curriculum emphasizes technologies and studies pertaining to environmental protection.

·   Maintain an Advisory Board consisting of leaders in industry from Silicon Valley is closely involved in shaping the nature and content of the programs offered by ITU.

·   Promote international exchange of scholars and students from locations around the globe.

The objective of ITU's degree programs is the education of competent engineers, engineering managers, and business administrators who are equipped with a thorough understanding of professional ethics, intellectual property law, environmental protection, and other contemporary issues.

University Location

International Technological University is located in the heart of Silicon Valley, about 50 miles south of San Francisco, seven miles north of San Jose, and is in the center of the world's greatest concentration of hi-tech, professional and scientific activity. Many firms around a five-mile radius of ITU—such as HP, Apple, INTEL, Microsoft, Yahoo! Google, AMD, ATMEL, Juniper Networks, Symantec, Cypress Semiconductor, SUN, NASA, Cisco, Applied Materials, Silicon Graphics, Adobe Systems, Altera, Adaptec, Cadence, Electronic Arts, Oak Technology, Brocade, Radius, Nvida, Synopsis and IBM—are global leaders in their fields. San Francisco, Marin County, Berkeley, Oakland, and the Santa Cruz beaches are all within one-hour's travel by bus, train, or car. The Monterey Peninsula, Carmel and the famous Napa Valley wine country are all less than two hours away. San Jose International Airport is about nine miles from campus.

University Address: 756 San Aleso Avenue
Sunnyvale, California 94085
Tel: (888) 488-4968
Toll Free: (888) 488-4968
Fax:(408) 331-1026

Map
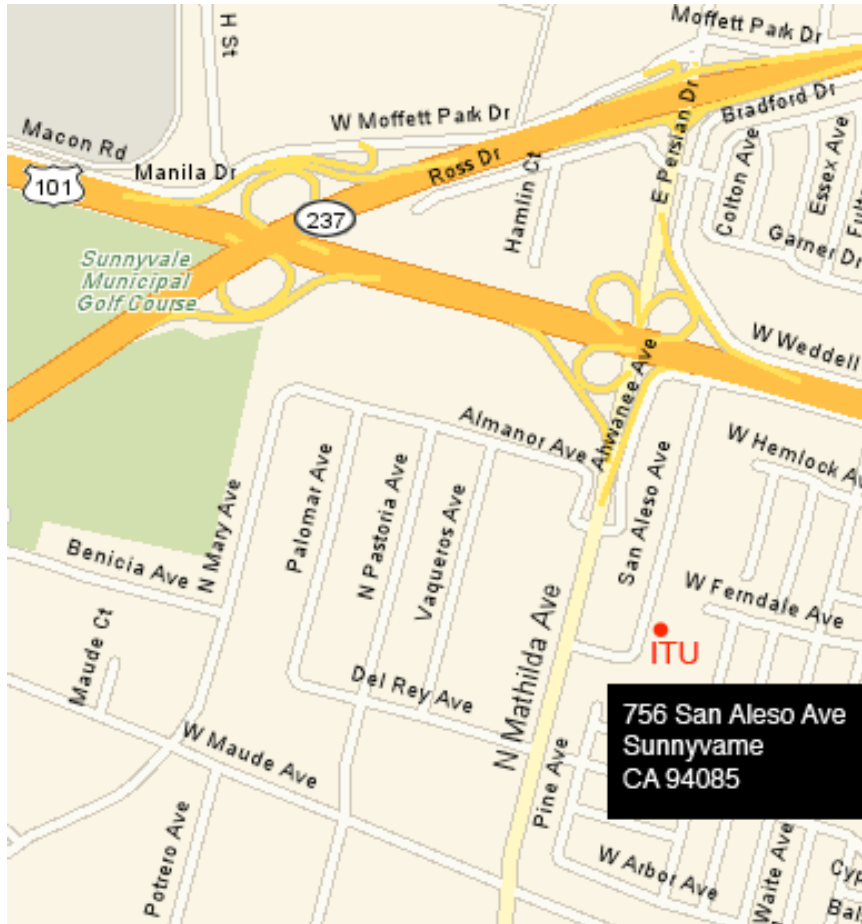
Academic Calendar

Scheduling

ITU courses are offered in two scheduling formats:
1. On-Demand Scheduling
2. Traditional Trimester Scheduling

On-Demand Scheduling

Tailored for maximum flexibility to serve the special needs of varying student groups, "On-Demand" courses are scheduled individually to meet students' need.

Process

- Students express interest to take an ITU course. This request is communicated to the ITU Registrar.
- ITU Registrar notifies all students after minimum student enrollment numbers are reached.
- Students coordinate with ITU Faculty to schedule class meetings.
- Convenient and non-traditional class meetings times are scheduled to serve students schedules, match instructor availability, and structured to ensure that students have sufficient opportunity for preparation, reflection, and analysis, concerning the specific learned subject matter.

    NOTE: On-Demand course scheduling is determined per course and approved by the Academic Committee, working together with the ITU Instructor facilitating that particular course, and with heavy consideration towards scheduling for student convenience.

Credit Units Calculation

The calculation of credit units awarded for "On-Demand" scheduled classes are based on one of the following two standards:

1. Credit Hour Standard
2. Learning Outcomes Standard

Credit Hour Standard

1 credit unit = 15 instructional hours = 30 lab hours = 45 practicum hours

For example, a course consisting of 3 units can be:
- 45 hours of lecture instruction, or
- 90 hours of lab work, or
- 135 hours of practicum work, or

Any combination using the same credit unit formula:

E.g. 15 hours of lecture instruction, plus 30 lab hours, plus 45 practicum hours

Learning Outcomes Standard

On-Demand course credit unit awards can also be based upon a "Learning Outcomes Standard". In certain courses, learning outcomes (also called "learning objectives") are delineated. These are learning outcomes, which ITU expects students to absorb during their studies in that course. If the learning outcomes in the On-Demand scheduled course are compared and found identical and/or qualitatively equivalent to the Learning Outcomes delineated and accomplished in the course curriculum offered in ITU's traditional course offering, then an equal award of credit units will be conferred upon the successful completion of that course.

NOTE: The Academic Committee determines the credit unit award of such a class based on students having acquired levels of knowledge, skills or competencies equivalent to those acquired in traditional formats.

Traditional Trimester Scheduling
Traditional Trimester Scheduling consists of Spring, Summer and Fall Semester scheduled throughout the academic year.

Fall Term 2009
(September 2 - December 15, 2009)

August 24 – September 1	Pre-registration
September 2- 8	Registration
September 2	First day of class
September 2	Orientation
September 7	Labor Day- holiday
September 9- 15	Late registration
September 29	Last day for add/drop
November 26 – 27	Thanksgiving-Holiday
December 15	Last day of class
December 16 – 19	Final examinations
December 21- January 20	Winter break
December 24- 25	Christmas- holiday
December 31	New Year's Eve- holiday

Spring Term 2010
(January 19 - May 3, 2010)

January 1	New Year's Day- holiday
January 4-5	Pre- registration
January 18	Martin Luther King Jr. - holiday
January 19	First day of class
January 19	Orientation
January 19- 29	Registration
February 1- 12	Late Registration
February 12	Last day for add/drop
February 15	Washington's birthday- holiday
May 3	Last day of class
May 4 - May 10	Final examinations

Summer Term 2010
(May 18 - August 16, 2010)

May 3- May 14	Pre- registration
May 17- 28	Registration
May 18	First day of class
May 18	Orientation
May 31	Memorial day- holiday
June 1- 11	Late registration
June 11	Last day for add/drop
July 3	Independence Day- holiday
August 16	Last day of class
August 17- 23	Final Examinations

Fall Term 2010
(August 31 - December 13, 2010)

August 16 – 27	Pre – registration
August 30- September 10	Registration
August 31	First day of class
August 31	Orientation

September 6	Labor Day – holiday
September 7-17	Late registration
September 17	Last day for add/drop
November 25 -26	Thanksgiving- holiday
December 13	Last day of class
December 14- 20	Final examinations
December 20 January 17	Winter break
December 24 -25	Christmas- holiday
December 31	New Year's Eve- holiday

1. Admissions

Application for admission to ITU should be submitted using the Application Form available on the ITU website.
(http://itu.edu/index.php?option=com_content&task=blogcategory&id=23&Itemid=44)

Applications
All ITU Applications must include:
1. Completed ITU Application Form (online or hard copy).
2. Non-refundable Application Fee
   (See website – www.itu.edu - for updated Application Fees for International and Domestic students).
3. Evidence of academic background and/or relevant work experience of the applicant.
4. Transcripts from previously attended colleges, universities and/or training institutions or equivalent evaluation records in keeping with the documentation practices of applicant's home country.
5. Applicants whose native language is not English are required meet one of the following requirements before graduation:

    (i)   Take the Test of English as a Foreign Language (TOEFL) within five years prior to admission. The minimum admission score is (IBT 61+, CBT: 173+) on new grading system.

    (ii)   Have completed at least thirty credit hours (30) of full-time study in a country where English is the language of instruction within five years of the date of enrollment.

    (iii)   Have completed the required ESL courses at ITU or other ITU approved institutions.

ALL APPLICANTS: Please read the following information and send the appropriate materials based on your individual situation.

PLEASE NOTE: The term **International Students** refers to all students who need F1 status to attend ITU. The term **Domestic Students** refers to all students who do not need F1 status, including legal U.S. residents/citizens, and those in the U.S. on a non-F1 visa who are not applying for a Change of Status to F1.

If you are an **International Student** applying for F1 status for the first time, please send us the following items:

- International Application form, completed and signed by you
  **If you were referred to ITU by a current ITU student, please write their full name in the referral section of the application (you may only put down one name, since we can only credit one person for the referral).
- Application fee of $80 (make checks payable to ITU)
- TOEFL score (IBT 61+, CBT: 173+)
- Official transcripts from your previous schools
- Bank statement (showing at least $22,500 available to you)
- Letter of Affidavit (if someone else is funding your education)
- Passport copy (first and last page)

If you are a **Domestic Student**, please send the following items:

- Domestic Application form, completed and signed by you

**If a current ITU student referred you to ITU, please write their full name in the referral section of the application (you may only put down one name, since we can only credit one person for the referral).
- Application fee of $80 (make checks payable to ITU)
- Official transcripts from your previous schools
- Passport copy (first and last page) or other form of ID.
- Local California address

If you are already on F1 status and **transferring** from another U.S.

university, Please submit the following items:

- International Application form, completed and signed by you
**If a current ITU student referred you to ITU, please write their full name in the referral section of the application (you may only put down one name, since we can only credit one person for the referral).
- Application fee of $80 (make checks payable to ITU)
- Official transcripts from your previous schools
- Bank statement (showing at least $15,000 available to you)
- Letter of Affidavit (if someone else is funding your education)
- Passport copy (first and last page)
- Local California address

If you are **applying for a Change of Status to F1**, please submit the following items:
- International Application form, completed and signed by you
**If a current ITU student referred you to ITU, please write their full name in the referral section of the application (you may only put down one name, since we can only credit one person for the referral).
- Application fee of $80 (make checks payable to ITU)
- Official transcripts from your previous schools
- Bank statement (showing at least $22,500 available to you)
- Letter of Affidavit (if someone else is funding your education)
- Passport copy (first and last page)
- Local California address

Trimester Admissions:
Applicants may apply for admissions into <u>any of the three Trimester Terms</u> each year.

On-Demand Admissions:
Applicants taking advantage of ITU's convenient On-Demand course scheduling program <u>may apply for admissions any time</u> throughout the year.

Entry Status
Unless otherwise determined by the Admissions Committee, all admitted entry level students have "Entry Status" at ITU. After the successful completion of two terms, or 18 credit units, students automatically become "Full Status" students.

High School Graduates
Students may enroll at ITU as a degree candidate straight out of high school (or equivalent) and take general education courses at other educational institutions at the same time to shorten the time needed for matriculation. Students still attending high school may enroll into an ITU course and obtain college credit for completing the course, but will not be considered a degree candidate until student has earned their high school

diploma (or equivalent) or determined to be an acceptable ITU degree candidate by the Academic Committee on a case by case basis.

Bachelor's Degree

Admission Requirements:

Admission into the bachelor's degree program requires evidence of high school completion or demonstration of equivalent skill level as evaluated on an individual basis by the Academic Committee.

- The Bachelor program is designed for those students who have completed their associate's degree or equivalent (60 credit hours of general education - see the "General Education Check List" for evaluation of student status) in a four-year program in general education.
- Minimum GPA: 2.0
- A student may also enroll in our Bachelor Degree Program while attending AA level coursework at another school. In such a case, the student would enroll at ITU with "Transitional Student Status" until completion of the AA or equivalent

Full Time Status Requirements
The minimum requirements for a Full Time bachelor's degree enrollment status are as follows:
- Enrolling in 12 credit units – or roughly 4 courses at 3 units/course - in each of two out of the three trimester terms throughout one year of study per 12 month period, starting from the student's first day of class attendance.

Master's Degree

The minimum requirements for admission are as follows:

- Evidence of baccalaureate degree or equivalent diploma in keeping with the documentation practices of applicants' home countries or demonstration of equivalent skills, training and experience as evaluated by the Admissions Committee.
- Students seeking transfer of credit will be evaluated based upon the documents customarily maintained by the institutions of their home countries as well as their individual, educational and experienced-based background as evaluated by the Graduate Admissions Committee.
- The Graduate Record Examination (GRE) general test or GMAT for MBA applicants is preferred, but not required.

Full Time Status Requirement

The minimum requirement of a Full Time masters degree enrollment status is as follows:

- Enrolling in 9 credit units – or roughly 3 courses at 3 units/course – in each of two out of the three trimester terms throughout one year of study per 12 month period, starting from the student's first day of class attendance. s

Transfer Credit

Bachelors or Masters Degree admissions:

- Credit units earned at other universities, colleges and educational institutions may be transferred into ITU up to 25% of the total number of credit units needed to graduate or as evaluated by the Admissions Committee on a case by case basis.
- Awards of academic credit may be granted to students who demonstrate competency in a subject area based on their academic, occupational, or personal experiences as evaluated by the Admissions Committee on an
  individual basis.

DOCTORATE DEGREE

General requirements for ITU's Ph.D. programs:

1) GRE examination could be waived according to applicant's qualification of working experience or technical publications
2) An applicant's GPA must be 3.0 or above to be considered for admission into a Ph.D. program
3) An applicant should have a Master of Science (MS) degree
4) If an applicant has a bachelor's degree, he/she must concurrently enroll in a master degree program to fulfill the credits requirement of a master's degree and then continue in the Ph.D. program
5) ITU will acknowledge transfer of credits in a master's program only if the student has completed an equivalent class at another institution with a grade of B or above.

2. Financial Information

Tuition and Fees per Trimester:
Fee Description
Amount

Application fee (local)
(one time fee, nonrefundable, sent with each application form)

$ 80.00

Application fee (international students)
one time fee, nonrefundable, submitting with each application)

$ 80.00

Tuition for all ITU International Students (per unit in any major)

$ 550.00

Tuition for ITU Domestic Students* listed below: Tuition for graduates (per unit for MBA)

$ 380.00

Tuition for graduates (per unit for MSEE/SE/CE)

$ 425.00

Tuition for undergraduates (per unit for all courses)

$ 275.00

Tuition for Multimedia Focus (per unit for all courses)

$ 425.00

Registration fee [1]

Early registration fee [1] (Trimester Scheduling only)	$ 50.00
Late registration fee [1] (Trimester Scheduling only)	$25.00
Student association membership (per term or equiv. month)	$100.00
Late payment fee	$ 15.00
Class Drop Fee	$ 20.00
Class Add Fee	$ 20.00
Fee for filing petition for Incomplete Grade	$ 10.00
Fee for course examination under Challenge Test Option	$ 50.00
Graduation fee (when filing for graduation request)	$ 100.00
International Campus Graduation Fee $ 120.00 Auditing fee (per graduate credit unit)	$ 100.00
Auditing fee (per undergraduate credit unit)	$ 350.00
Academic transcript fee (per copy)	$ 250.00
Returned check fee	$ 15.00
Switching payment/Holding check	$ 100.00 $ 50.00
Deferl-20	$ 30.00

LAPTOP COMPUTER REQUIREMENT:
All ITU students are required to bring in a working laptop computer to class. Failure to obtain a personal laptop by the second week of class may result in dismissal from the university.

[1]Non-refundable, regardless of the number of units registered.

*Any ITU International Student that has taken a full load for one semester at ITU (10 units for graduate students, 12 units for undergraduates) is considered an ITU Domestic Student thereafter.

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Financial Obligations and Refunds

With the exception of the first term's tuition of ITU International Students, ITU Domestic Students may formally withdraw from a class by completing a *Course Drop Form*. If a student withdraws from a course (i.e. drops the course by processing the withdraw form), he/she may be eligible to receive a refund. The last class date or lecture hour (whichever is later) before the *Course Drop Form* is received will be used to calculate the refund in accordance with the following schedule, provided that the student returns all the checked out items such as library books and equipment prior to refund. The detailed refund schedule for a typical 3 credit unit class is as follows:

Date of Withdrawal	% of tuition refundable
Before the first day of a semester	100%
Before the 2nd meeting of class Or the 4th class hour	90%
Before the 3rd meeting of class Or the 7th class hour	75%
Before the 4th meeting of class or the 10th class hour	60%
After 4th meeting of class Or the 12th class hour	no refund

Financial Aid

Source: ITU offers financial aid to students through a variety of means, including the ITU Scholars Fund. Also, various loan programs are available for both graduate and undergraduate degree students. The ITU Scholars Fund also offers a limited number of tuition waiver scholarships and graduate assistantships each year. All ITU students are eligible to apply for the ITU Scholars Fund.

Number: The number of ITU scholarships varies from year to year. For fiscal year of 2007, ITU offered 15 teaching assistantships, 1research assistantships, and 2 administrative assistantships. For fiscal year of 2008, ITU offered 50 teaching assistantships, 3 research assistantships, and 10 administrative assistantships. The number of such awards depends largely on the course offerings. Similar numbers are expected for fiscal years 2009 through 2010.

Terms and Conditions: Assistantships are appointed either for a trimester or for an academic year consisting of two or three trimesters as specified by the individual appointment. Recipients are expected to devote 20 hours per week of services for a part-time (50%) appointment. For a part-time teaching, research, or administrative assistantship, the stipend is $640 per month and a tuition fee waiver is not included. For tuition waiver scholarships, partial or full tuition fees waivers may be granted based on a combination of an individual applicant's potential to succeed, proven track record and/or financial need as evaluated by the Awards Committee.

Basis of Selection: The ITU awards depend primarily on the academic promise, scholarly achievement and working accomplishment of the applicants. Items considered include student's achievement, work history, awards & accolades, GPA, letters of recommendations, transcript records, socio-economic and cultural background. However, they are not restricted to any particular field of study. Recipients of the awards can accept other part-time jobs.

Application Procedures: Students can submit applications directly to ITU Awards Committee, which makes final recommendation to the Academic Vice President. Recommendation letters are not required but recommended and will be considered when submitted. Recommendation letters must be sent directly to the Awards Committee. Application forms are available from the website (www.itu.edu).

3. Enrollment

Adding and Dropping Courses

Students may not add a course after the fourth week of instruction in the trimester scheduling system unless otherwise determined by the Academic Committee. The deadline for dropping a course is no later than the fourth week of the term. Dropping a course after the fourth week of instruction will result in a grade of WP or WF (W=Withdraw, P=Pass, F=Fail), depending on whether or not the student was passing or failing the course at the time of dropping. Refund of tuition will be issued for a dropped course according to the fee schedule stated in Financial Obligations and Refunds section.

The deadline for dropping an On-Demand course is before the 12th instructional hour of class (or its equivalent in lab hours, practicum hours, or a combination thereof). Refund of tuition will be issued for a dropped On-Demand course according to the fee schedule stated in the Financial Obligations and Refunds section.

Holders of fellowships, assistantships, tuition and fee waivers, and student visas must maintain the required number of credit hours or risk loss of their tuition and fee waiver for the term. Students who lose their waivers will be billed the full cost of tuition and fees.

Advisors

All students must have an academic advisor. The academic advisor assists in the planning of a program of study that fits the needs of the student and satisfies the program requirements. ***Advisor approval with signature is required for registration every semester***.

Continuation and Probation Rules

Students are considered to be in good standing if they:

- Meet all admissions requirements
- Are not on academic probation; and
- Are making satisfactory progress towards degree requirements, including a project or thesis if required.

Course Load

Students who can devote full time to their studies usually enroll for 12 to 15 credit hours for undergraduate and 9 to 12 for graduate.

International Students: For purposes of enrollment certification to the Bureau of Citizenship and Immigration Services, U.S. Department of Homeland Security, ITU considers a foreign student to be pursuing a full-time program of study if the student registers as a full-time student for Fall, Spring and/or Summer Semester

Time Limits

A full-time undergraduate student entering the university without any transferred credit units is expected to complete all requirements within four calendar years. A part-time undergraduate student is expected to complete all requirements within eight calendar years.

All candidates for bachelor's degree must complete all of the requirements within ten calendar years after their initial registration at ITU.

All candidates for master's degree must complete all of the requirements for matriculation within six calendar years after their initial registration at ITU.

Probation

ITU monitors the academic progress of its students at the end of each semester. Academic probation is ITU's mechanism for warning students that their GPA has fallen below the minimum standard. An undergraduate student will be put on academic probation if the student's GPA is less than 1.65. This evaluation will be conducted at the end of each semester. The student will be dismissed if his/her GPA is less than 2.0 after reaching 100% of maximum time frame or is on probation for three consecutive semesters.

A graduate student will be put on academic probation if the student's GPA is less than 2.65. This evaluation will be conducted at the end of each semester. The student will be dismissed if his/her GPA is less than 3.0 after reaching 100% of maximum time frame or is on probation for three consecutive semesters.

Students will be notified in writing of their probationary status. Students have two semesters of enrollment to remove themselves from probation. Students who leave ITU while on probation, whether through formal withdrawal or through failing to meet registration requirements, will still be on probation if they are later readmitted to the same program. Readmission as an ITU student is not guaranteed.

Students who fail to raise their average to 2.0 for undergraduates and 3.0 for graduates, or otherwise fail to fulfill the terms of their probation within the deadline will be dismissed from the university. Students will be informed in writing of their probation and their dismissal. However, failure to receive notice of either probation or dismissal will not change the student's probation or dismissal status, or the schedule upon which their status is processed. Students are expected to monitor their own progress in light of university policies.

To address mediation mitigating or special circumstances, students may appeal any of the decisions of the Academic Committee by petitioning consideration to ITU in writing.

Repetition of Courses

If a student takes a course in which a grade of D, F, WF or WP is received, the student can elect to take course again. The course can be repeated only once and counted only once toward the degree requirements. The original grade, except grades WF and WP, continues to be included in the computation of the cumulative GPA.

Under certain exceptional circumstances, a student earning a grade of D, F, WF or WP, can petition the Academic Committee to retake the course for a one-time exception. If written consent is obtained from the Academic Committee, the student may elect to retake the course, and dropping the lower grade for the higher of the two. This "GPA Amnesty" may be exercised only once in any degree program.

Financial Aid Status for Probationary Students

Students remain eligible for financial aid during the academic probation period. However, a student receiving aid whose cumulative GPA

(CGPA) is less than 2.0 after attempting at ITU a total of 24 units (undergraduate students) or 18 units (graduate students), will no longer be eligible for financial aid and/or tuition waiver and will be dismissed, unless the student wishes to continue without being eligible for financial aid.

Students who reestablish satisfactory progress within the terms specified above will be removed from academic probation. Students not clearing their academic probation within three academic terms will be dismissed.

Students on academic probation who change programs or seek additional degrees will remain on academic probation and their previous ITU academic record will be used in determining their satisfactory academic progress.

Classes – Scheduling Hours
Most classes at ITU are taught between 5 and 10 p.m., Monday through Friday, or on the weekend, meeting one day per week. A few courses are scheduled between 9 a.m. to 7 p.m. (Please consult the department office for details). On-Demand course can be scheduled anytime convenient for students, with the fulfillment of a minimal student enrollment number, availability of instructor, and approval of the Academic Committee.

Credit Hours for Courses
Academic credits are measured in terms of credit hours. One credit hour is equivalent to one trimester term hour, where one trimester credit hour equals 15 classroom hours of lecture.
In addition, one semester credit hour equals 30 laboratory hours and one semester credit hour equals 45 practicum hours.

Grading System
The following grades are used:

A   = 4.0 grade points per credit hour

A- = 3.7 grade points per credit hour

B+ = 3.3 grade points per credit hour

B   = 3.0 grade points per credit hour

B- = 2.7 grade points per credit hour

C+ = 2.3 grade points per credit hour

C = 2.0 grade points per credit hour

C- =1.7 grade points per credit hour

D+ = 1.3 grade points per credit hour

D = 1.0 grade points per credit hour

D- = 0.7 grade points per credit hour

F   = 0 (failure; not accepted as degree credit hour)

I = Incomplete. Used only for reasons beyond student's control. An 'I'

that is not removed will remain on the student's record as an 'I',

with no credit hours earned, and is not computed in the GPA.

P/NP (pass/not pass) - Used as an alternative grading option for students. P/NP option is not available for required core courses. Passing mark earns grade points towards graduation, but is not calculated in the GPA. No grade points are earned for the NP mark, and the grade is not computed in the GPA.

AUD – auditing. No grade points are earned and the grade is not computed in the GPA.

NR – Used by the Office of Admissions and Records to indicate no grade was reported.

WF – Failed the course at the time of withdrawal. No grade points are earned and the grade is not computed in the GPA.

WP – Passed the course at the time of withdrawal. No grade points are earned and the grade is not computed in the GPA.

Only courses in which a student has earned at least a grade of C- and P are counted towards the master's degree and at least D- and P for the bachelor's degree. However, all registered credit hours are counted as credit hours attempted, and all grades except I, P, NP, WP, WF, AUD and NR are used in computing the GPA. A student must earn a cumulative 3.0 GPA as a graduate student to be eligible for the master's degree, and a cumulative 2.0 GPA for the bachelor's degree.

All courses require letter grades except those specifically designated. For deficiency courses, a letter grade should be given although not counted in the student's overall GPA. A grade of C- or better constitutes a passing grade for a deficiency course. All deficiency courses can be completed at any accredited institution.

Attendance Policy

Students at ITU are required to attend all assigned classes regularly. If a student has a medical or other emergency he/she should, if possible, contact the instructor and inform them of their absence ahead of time. ITU allows and encourages instructors to include attendance and class participation into their grading structure.

Petitions

Students may petition in writing for exceptions to any of the university's regulations directly to the Academic Committee, but may do so only after consulting with their advisor, whose recommendations must appear on the petition. Petition forms may be obtained from the website (www.itu.edu) or the Office of Admissions and Records and must be accompanied by a full explanation of the circumstances, and any appropriate forms required for processing a requested change. *Petitions must be filed within 30 days* from the time an individual knows, or reasonably should have known, that an occurrence has affected his/her status.

Registration

Registration procedures and class offerings are published in the Class Schedule each semester. Students are responsible for the complete and accurate processing of their registration according to the guidelines published there in. New students may register during the designated period at the beginning of their first term or during the late registration period. Currently enrolled students should register during the pre-registration period, in the previous term or the registration period of the current term. Continuing students who wait to register at late registration will be accessed a late registration fee.

Repetition of Courses

Students can repeat a course for credit if:

- The course is designated with the phrase "May be repeated for credit."
- The course is one in which a grade of I, D, F, WF or WP was received. In such cases, the course can be repeated and counted only once toward the degree requirements if the student passes the class.
- Or with the permission of the Academic committee on a case-by-case basis.

Limits on Transfer Credit

The specific number of credit hours accepted for transfer is determined on an individual basis. No transfer is automatic. For graduate degrees, no more than 25 percent of the credit hours can be transferred unless otherwise determined by the Academic Committee on a case-by-case basis. This limit includes courses taken as a non-degree student, unless otherwise determined by the Academic committee on a case-by-case basis.

Auditing Privileges

Auditing classes are permitted, provided a form bearing the approval of the instructor and the administration office is filed with the Office of Admissions and Records.

Policy for Incomplete Grade

If a student has passed the deadline for dropping a course and wishes to take an Incomplete grade I, the student must file a petition with the Registrar prior to the final examination, if possible, and only after obtaining written approval from the instructor of each course. The grade incomplete grade is used only for reasons beyond the student's control. An I that is not removed will remain on the student's record as an I, with no credit earned, and not be computed in the GPA. The student has 12 months to complete the course with a standard letter grade evaluation. After 12 months, the incomplete remains on the transcript and the course must be repeated if required for degree matriculation.

Challenge Test Option

At the discretion of the instructor and with the approval of the Academic Committee, ITU offers a *Challenge Test Option* for students with course deficiencies to see if he/she has the proper background and prerequisites for the advanced courses. If a student fails this test, he/she cannot retake the test for this course again and must enroll and pass the corresponding course.

4. University Regulations

Academic Grievance Procedures

An academic grievance procedure defines an administrative process through which students or employees may seek resolution of complaints or grievances arising from a decision made about them.

Informal Procedure

A student or an employee who has a complaint or request is expected first to resolve the complaint informally. The effort must include discussions with the specific faculty member, teaching assistant or staff member involved. A demonstrated lack of good faith by any party in attempting to resolve complaints informally may be considered with all other factors in reaching an ultimate decision on the merits of any grievance.

Formal Procedure

If all reasonable informal efforts to resolve the complaint fail, a student or employee may formalize it as a grievance. A formal grievance must be filed within 45 days from the time the student believes, or reasonably should have known, that an occurrence has effected his/her status. This period of 45 days includes all informal efforts to resolve the grievance. The student must submit the grievance in writing to the Administration Office. A proper administrator will conduct an investigation of the grievance and may interview the student for further clarification. After the investigation, the administrator may either grant or deny the redress sought or provide remedies. The decision will be issued no later than 14 days following receipt of the written grievance. If the administrator does not grant redress satisfactory to the student, the student has 14 days to appeal the decision to university president upon written receipt of the appeal. The president has 14 days to notify the student of his decision, either grant or deny the redress sought or provide other remedies. The president's decision is final. The student will be further advised that any unresolved grievances may be directed to the Bureau for Private Postsecondary and Vocational Education, 1027 Tenth Street, Fourth Floor, Sacramento, CA 95814-3517.

Academic Integrity

ITU is dedicated to learning and research, and hence is committed to truth and accuracy. Integrity and intellectual honesty in scholarship and scientific investigation are, therefore, of paramount importance. These standards require intellectual honesty in conducting research, writing of research results and relations with colleagues. Academic misconduct includes cheating, plagiarism, falsification of data, etc.

Confidentiality of Student Records

ITU fully complies with the Faculty Educational Rights and Privacy Act of 1974, and may release directory information, including name, address, phone number, and major field of study to any person on request unless a student requests in writing that directory information be kept confidential. ITU will safely keep student records for an indefinite period. Law from inspection excludes certain records. Specifically, those created or maintained by a physician, psychiatrist, or psychologist in connection with the treatment or counseling of a student. Students may inspect their records in the Office of Admissions and Records. Students may direct complaints regarding academic records to the Registrar.

Nondiscrimination Policy

The commitment of ITU to the most fundamental principles of academic freedom, equality of opportunity, and human dignity requires that decisions involving students and employees be based on individual merit and be free from invidious discrimination in all its forms, whether or not specifically prohibited by law.

The policy of ITU is to comply fully with applicable federal and state nondiscrimination and equal opportunity laws, orders and regulations. ITU will not discriminate in programs and activities against any person because of race, color, religion, sex, national origin, ancestry, age, marital status, handicap, unfavorable discharge from the military, or status as disabled veteran or veteran of Vietnam era. This nondiscrimination policy applies to admission, employment, and access to and treatment in University programs and activities.

Complaints of invidious discrimination prohibited by university policy shall be resolved exclusively within existing ITU procedures.

Sexual Harassment Policy

Sexual harassment is defined by law and includes any unwanted sexual gesture, physical contact, or statement that is offensive, humiliating, or any interference with required tasks or career opportunities at ITU. Sexual harassment is prohibited under federal and state discrimination laws and the regulations of the Equal Employment Opportunity Commission.

ITU will not tolerate sexual harassment of students or employees and will take action to provide remedies when such harassment is discovered. The University environment must be free of sexual harassment in work and study. In order to assure that ITU is free of sexual harassment; appropriate sanctions will be imposed on offenders in a case-by-case manner. ITU will respond to every complaint of sexual harassment reported.

Encumbrance of Registration and Records

Students who owe any money to ITU will not be permitted to register, will not be entitled to receive an official transcript of their credits, will not be entitled to receive their diplomas, and will not be entitled to receive certification for practical training for foreign students until their indebtedness has been paid.

5. Degree Programs & Requirements

Degree Titles and Specialization

Bachelor of Science (BS)

Degree Title: Bachelor of Science in Computer Science
Major: Computer Science
Specialization: IT Security, Software, Software Tools, and Networking

Degree Title: Bachelor of Science in Computer Science (MM Focus)
Major Computer Science
Focus: Performance Art & Multimedia Marketing
Specialization: Digital Filmmaking, Animation, Game Design, Acting, Health Maintenance, Performance, Business Marketing, Digital Media Production

Degree Title: Bachelor of Science in Business Administration
Major Business Administration
Specialization: Accounting, Advertising and Marketing, Economics, Enterpreneurial/Small Business Management, Finance, Management, Human Resources, Management Information Systems.

Master of Science (MS)

Degree Title: Master of Science in Computer Engineering
Major: Computer Engineering
Specialization: IT Security, Computer Networking, and Digital Systems

Degree Title: Master of Science in Electrical Engineering
Major: Electrical Engineering
Specialization: VLSI, Digital Signal Processing, Circuits and Systems, Wireless Communication, and Digital Communications

Degree Title: Master of Science in Software Engineering
Major: Software Engineering
Specialization: IT Security, Software Testing, and Software Tools and Systems

Degree Title: Master of Science in Digital Arts
Major: Digital Arts
Specialization: Digital Filmmaking, Animation, Game Design, Acting, Performance, Business Marketing

Degree Title: Master of Science in Engineering Management
Major: Engineering Management
Specialization: Managing Professionals, Product Strategy, Outsourcing Management, Product Marketing

Degree Title: Master of Science in Health Care Management
Major: Health Care Management
Specialization: Service Delivery, Health Sector Innovation, Healthcare Company/Industry Structure

Degree Title: Master of Business Administration
Major: Business Administration
Specialization: Accounting, Finance, Human Resources, Information Systems Management, International Business, Management, Marketing, General MBA, Green MBA, Executive Master of Business Administration (EMBA).

Doctor of Philosophy (PhD)

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Degree Title: Doctor of Philosophy in Electrical Engineering
Major: Electrical Engineering
Specialization: VLSI Design, Digital Communication, Wireless Communications

Degree Title: Doctor of Philosophy in Software Engineering.
Major: Software Engineering.
Specialization: Artificial Intelligence, complex digital systems, computer algorithms

Degree Title: Doctor of Business Administration.
Major: Business Administration.
Specialization: Accounting and Financial Management, Applied Computer Science, Business Administration, Global Management, International Business, Management, Management Information Systems, Marketing, Public Administration

SPECIALISED CURRICULUM:

English as Second Language (ESL)

Degree Title: English as Second Language
Major: English
Specialization: Grammar, Vocabulary and pronunciation.

Changes in Degree Requirements

ITU policies and requirements change periodically and may not be immediately reflected in campus publications. New degree requirements, however, are not imposed retroactively on continuing students unless agreed upon by the student. If degree requirements are changed, continuing students may complete their degree programs under the requirements in effect at the time of their initial enrollment. They have the option of electing to be governed by the new requirements if they so desire, provided that all requirements of one catalog are met.

General Requirements for the Bachelor's Degrees

General Requirements

All bachelor's degree recipients must complete at least 60 semester credits in the area of concentration or an allowed cross-disciplinary field, whether the courses are taken at ITU or transferred in from other institutions. Together, the awarding of the Bachelor of Science degree requires the completion of at least 120 semester credits.

A grade point average of at least 2.00 out of 4.00 is required for all courses taken that are eligible for accruing credit towards an undergraduate degree. Credit towards a BS degree is not given for any course with a grade lower than D-. A student's curriculum is planned in consultation with the student's assigned faculty advisor, who must approve all courses taken by the student in writing.

Bachelor of Science in Computer Science

The purpose of the *Bachelor of Science degree in Computer Science* is to prepare students for careers in the fields of software engineering, computer system administration, programming, computer laboratory administration, digital filmmaking, computer animation, game design and development, individual performance, among others.

Program Description

The Bachelor of Science program in Computer Science is designed for those students who are interested in the use of computer technology in achieving their career goals.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Understand general education concepts.
- Be able to apply critical thinking skills in the integration of quantitative and qualitative information.
- Be able to demonstrate effective verbal and written communication skills.
- Understand the foundation of humanities, social sciences, math, and natural sciences, and/or baccalaureate degree work.
- Be familiar with prerequisites for entry into a Bachelor of Business program at the junior level.
- Be able to demonstrate the skills necessary for research and life-long learning.
- Be able to raise awareness of global and multicultural concerns.
- Understand the role of technology.
- Be able to gather, analyze, and present information, as well as enhance instructional practices and facilitate professional productivity and communication.

Requirements

Satisfy the BS degree program admission requirements.

For BSCS students choosing the traditional focus, successfully complete a total of at least 60 credit hours as follows:
- 6 credit hours in applied mathematics
- 3 credit hours in joint seminars
- 21 credit hours in core courses in computer science
- 30 elective credit hours, including independent study or projects

For BSCS students choosing the Multimedia focus, successfully complete a total of at least 60 credit hours as follows:
- 3 credit hours in joint seminars
- 57 elective credit hours, including independent study or projects

For BSCS Traditional Focus:
- 6 credit hours in applied mathematics from the following: AMN 301, 302, 310, and 340, or other approved courses
- 3 credit hours in joint seminars: GRN 497 series
- 21 credit hours in core courses -- CSN 321, 324, 377, 378, 381, 422 and 382, 481 or other approved courses
- 30 elective credit hours, including independent study or projects

Program Student Learning Outcomes for BSCS Multimedia Focus :

Upon completion of this program, graduates will:
- Be able to apply a conceptual mindset of effective rhetorical communication and gain a self-reflecting, rhetorical perspective that focuses their work on effective communication.
- Be familiar with a wide range of functional toolsets for multimedia applications.
- Be able to apply comprehensive fundamental toolsets in a multimedia application with accuracy and speed.
- Be able to apply the toolsets with sensibility and a creative, artistic eye for a professional product.

Curriculum

- 3 credit hours in joint seminars: GRN 497 series
- 57 elective credit hours, including independent study or projects

Instructional Methods

Lectures, seminars, engineering practice, laboratory, field trips and hands-on project-based learning.

Masters of Science in Computer Engineering

Many societies around the world experience a rapidly growing need for computer engineers. The areas in which modern computer engineers' works are comprised of the design of modern computerized electronics, embedded systems, microprocessors, ever smaller and more powerful computers, and "hardware-close" programming. Depending on which individual courses students choose in compliance with this curriculum, the outcomes of their studies may show variety in detail, but will, in the basic structure, always fulfill the key elements considered necessary for successful work as a computer engineer.

Computer engineering is a discipline that combines elements of both electrical engineering and computer science. Many students consider an MS in computer engineering worth earning, since the full breadth of knowledge used in the design and application of computers is well beyond the scope of an undergraduate degree. Furthermore, in the United States computer engineering belongs to the three disciplines with the highest starting salaries.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Be able to design analog and digital circuits.
- Be able to write "hardware-close" programs.
- Understand digital signal processing and digital circuits.
- Understand computer architecture and organization, hardware/software integration, and human/computer interaction.
- Understand computer operating systems and embedded systems.
- Understand Unix operating system.
- Understand the nature and behavior of algorithms.

- Be able to apply programming and software engineering fundamentals.
- Be familiar the database system.
- Have awareness of societal impacts and professional responsibilities.

The completion of at least 36 semester credit hours of graduate courses in the major core field, 3 credit hours of Joint Seminar and/or thesis or project, includes:

- 6 credit hours in computer engineering related courses: SEN 909, 920, CEN 911, 911, 951, and 910 or other approved courses
- 27 credit hours of electives, project or thesis upon the approval of the advisor
- 3 credit hours in joint seminars: GRN 997

Masters of Science in Electrical Engineering

The Electrical Engineering degree program currently focuses in the following areas: *IC Design, Digital Signal Processing*, *Communications*, and *Circuits and Systems*, leading to the degree of Master of Science in Electrical Engineering (MSEE). Its purpose is to prepare students for career in education, or research and development in industry.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Understand the fundamentals of mathematics, science and engineering.
- Understand design specifications to analyze and solve engineering problems and implement a design specification toward a complete engineering solution by applying knowledge of mathematics, science, and engineering.
- Know professional and ethical responsibility in the accomplishment of engineering tasks.
- Be able to apply economic engineering solutions.
- Be able to read, write, listen, and speak effectively, and to communicate significant technical information in a clear and concise manner.
- Understand and identify the various needs of customers.
- Be able to work productively and successfully as a team member.
- Be able to enhance their engineering skills through experimentation, discovery, and verification of ideas and concepts.

MSEE Requirements

The completion of at least 36 semester credit hours of graduate courses in the major field of study, 3 credit hours of joint seminar and/or thesis or project, including:

- 12 credit hours in electrical engineering: EEN 902, 910, 915, 931, 941, 953, 954, 961, 963, 971, CEN 922, SEN 920 or other approved courses

- 6 credit hours in applied mathematics selected from the following:
  AMN 912, 920, 921, 922, 930, 940, 950 and 952 or other approved courses
- 3 credit hours in joint seminars: GRN 997
- 15 credit unites of electives, project or thesis upon the approval of the advisor: For specialization in VLSI Design or Circuits and Systems, select courses from the following: EEN 903, 904, 911 to 928, 931, 932, 941, 946, 954, 964, 974, 995, 996, 998 and 999, CEN 752, and SEN 909 and 922, or other approved courses. For specialization in Networking & Digital Signal Processing or Communications, select courses form the following: EEN 911 to 918, 924, 931, 941 to 946, 951 to 953, 954, 961 to 965, 970 to 974, 995, 996, 998 and 999, CEN 650, 752, 965 and 973, SEN 909, 922, 953 and 984 or other approved courses

Masters of Science in Software Engineering

The Software Engineering MS degree program currently focuses in three major areas: *IT Security, Software Development, Testing and Tools* and *Systems*, leading to the degree of Master of Science in Software Engineering (MSSE). Its purpose is to prepare students for career in education, or research and development in industry.

Many societies around the world experience a rapidly growing need for software engineers. The areas in which modern software engineers work are almost boundless. Depending on which individual courses students choose in compliance with this curriculum, the outcomes of their studies may show variety in detail, but will, in the basic structure, always fulfill the key elements considered necessary for successful work as a software engineer.

Program Student Learning Outcomes :

Upon completion of this program, graduates will:
- Be able to apply SWEBOK principles and methodologies.
- Be able to apply object-oriented methodology for software design and other programming paradigms, such as aspect-oriented methodology, functional decomposition, etc.
- Understand the software life cycle.
- Understand the importance of requirements-gathering and clear requirements-specification.
- Understand the importance of developer/customer interaction.
- Be able to choose a proper software development model (e.g., agile development, extreme programming, RAD, etc.).
- Be able to master at least one design language (e.g., UML).
- Be able to apply various testing strategies (e.g., white box, black box, integration testing, etc.).
- Know how to avoid software development pitfalls.
- Be able to apply important management principles in the context of software development (i.e., leadership, managing human resources, managing the project and the process as a whole).
- Know one or more important programming languages (e.g., C++, Java, PHP, Python, Ruby, etc.).

- Know essential computer science topics, such as searching, sorting, hashing, trees, B-trees, lists, stacks, queues, and RSA encryption.
- Understand computational complexity (e.g., Big-O runtime order, NP-completeness, etc.).
- Know the inner-workings of a relational database.
- Be able to design, program, and manage a database.
- Understand the essential requirements of a user-friendly graphical user interface (GUI).
- Be able to design a user-friendly GUI.
- Understand 3-D graphics concepts.

MSSE Requirements

The completion of at least 36 semester credit hours of graduate courses in the major field, 3 credit hours of Joint Seminar and/or thesis or project, including:

- 6 credit hours in software courses: SEN 909, 920, 980, 990, CEN 951, and 959 or other approved courses
- 3 credit hours in joint seminars: GRN 597
- 27 credit hours of technical electives, project or thesis upon the approval of the advisor. All non-required software engineering courses are acceptable. Recommended courses include: SEN 956, 992, 909, 930, and 963

Masters of Science in Digital Arts

The Master of Science in digital arts program is a well-rounded, project-based learning program geared to give students practical skills creating digital projects for the market—from conception and production to packaging and marketing.

Students will learn all the concepts and skills necessary for taking a project from conception to production, including story creation, visualization & design, animation, filmmaking, business marketing, and the scripting and authorship of web-based promotion. These skills are acquired via practical execution of the creation, production and promotion of various structured projects, designed for the mastery of skills in the digital arts field.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Be able to create digital projects for the market – from conception and production to packaging and marketing.
- Understand how to deliver production; including story creation, visualization, and design by acquiring structured digital production skills.
- Be able to develop animation, film, and web design, having completed a minimum of three projects.
- Be familiar with the filmmaking industry by learning the production pipeline for digital production and gaining valuable practical work experience as a team member within the pipeline.
- Know business marketing via traditional methods and web-based promotion.

MS Digital Arts Requirements

The completion of at least 36 semester credit hours of graduate courses in the major field, 3 credit hours of Joint Seminar and thesis or project, including:

- 6 credit hours in Digital Arts : MMM 901, 903, 905, 911, 925 or other approved courses
- 3 credit hours in joint seminars: GRN 997
- 27 credit hours of technical electives, project or thesis upon the approval of the advisor. All non-required digital arts courses are acceptable.

Masters of Science in Engineering Management

The Engineering Management program is specifically designed to prepare students to become effective managers in today's technology related fields. The management of technology is much different than other forms of management. Engineering managers need a much broader ranges of skills that are both technical and managerial. This program offers a hybrid of both technical and management related classes designed to prepare students with the necessary skill set to be successful with the unique challenges faced by today's high-tech Engineering Managers. The program emphasis is on continuing to build stronger technical and communication skills while developing the management background and foundation skill set required for most Engineering Management positions. The program is designed for students who have earned a bachelors degree in engineering, science, mathematics, computer science, or a closely related field.

Program Student Learning Outcomes :

Upon completion of this program, graduates will:
- Be able to apply skills pertinent to the entrepreneurial and entrepreneurial management of both existing and emerging technologies.
- Understand engineering safety, strategies, and life cycle properties of a project.
- Be able to estimate and control engineering cost, including planning and scheduling, labor productivity, alternative methods for project delivery, and computer applications, such as e-business solutions.

MS Engineering Management Requirements

The completion of at least 36 semester credit hours of graduate courses in the major field, 3 credit hours of Joint Seminar and/or thesis or project, includes:

- 6 credit hours in software courses: SEN 941, 942, MISY 915, and BUS 411,413 or other approved courses
- 3 credit hours in joint seminars: GRN 597
- 27 credit hours in elective courses, project or thesis upon approval by the advisor. Choose elective courses from the Software, Multimedia Marketing, Management, Finance, Economics, IT Security and Decision Information Sciences course offerings or other approved offerings.

Master of Science in Healthcare Management.
		The Healthcare Management Program targets students who are considering a career in the healthcare industry. The program's core purpose is to educate, prepare, and motivate the students to competitively apply and succeed in a career in healthcare management. The healthcare profession offers a unique combination of job satisfaction and rapidly growing demand.

Program Student Learning outcomes:

Upon completion of this program, graduates will:
- Be able to make ethical decisions about healthcare issues
- Understand various aspects of a healthcare environment, including legal, regulatory, political, social and technical
- Know healthcare laws and regulations in order to proactively follow them
- Know one's own professional values, potential career pathways, and healthcare role development opportunities.
- Understand the structure of healthcare delivery and finances
- Understand human behavior in healthcare organizations, including the ability to lead and ork in teams
- Be able to apply and evaluate problem-solving methods and performance improvement techniques.
- Be able to demonstrate awareness of factors affecting health, including culture, age, gender and socio-economic status.
- Be able to assume a professional/leadership role
- Be able to apply knowledge from multidisciplinary resource to critically analyze current healthcare issues.
- Know the components of an Economic Health Record, and other uses of Information Technology in Healthcare.

MS Healthcare Management Requirements:
	The completion of at least 36 semester credit hours of graduate courses and/or thesis or project, includes:

- 18 credit hours in core courses: HCM 901, 906, 907, 908, 909, 930, 931, 932, 933, 934, and 980.
- 3 credit hours in joint seminars: GRN 597
- 15 credit hours in healthcare elective and management concentration courses, project or thesis upon approval by the advisor. Healthcare Elective courses: CTR 900, HCM 902, 903, 904, 905, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923; Management Concentration courses: ACTN 900, CONS 900, FINN 932, MGTN 901, 920, 942, 948, 950, 954, 955, and MISY 915.

Doctor of Philosophy in Electrical Engineering
	The Doctor of Philosophy in electrical engineering is an academic/research degree that prepares students for careers in research and teaching of electrical engineering. This program is administered through the Engineering School of Graduate Studies.

Program Student Learning Outcomes :

Upon completion of this program, graduates will:
- Be able to demonstrate high professional ethics and mastery of fundamental concepts of electrical engineering.
- Be able to identify, investigate, formulate, and solve new problems of interest, conduct independent scholarly research, and contribute new ideas and engineering concepts to society.
- Be able to think analytically and demonstrate knowledge and language skills to serve in positions of technical leadership.
- Be able to demonstrate independence and assume major professional and ethical responsibilities in their careers.
- Understand business and engineering economics.
- Be able to clearly and effectively communicate difficult technical concepts.
- Understand and identify various needs of customers.
- Be able to work as a team member productively and successfully.
- Be able to demonstrate a high level of academic skills in education, technical creativity, leadership, and management

Ph. D. in Electrical Engineering Requirements:

The completion of at least 30 semester credit hours of graduate courses in the major field of study, 18 credit hours of thesis, includes:

- 24 credit hours o required electrical engineering courses EEN 913, 914, 916 to 919, 922 to 950, 953, 958 to 961, 971 to 973, 977 to 999 or other approved courses
- 6 credit hours in applied mathematics selected from the following:
  AMN, 912, 920, 921, 930 and 940 or other approved courses
- 18 credit hours of thesis.

Doctor of Philosophy in Software Engineering

The Doctor of Philosophy in software engineering is an academic/research degree that prepares students for careers in research and teaching of software engineering methods. This program incorporates courses from the departments of software engineering and computer engineering. Prior to entering this program, students must pass a qualifying examination on software engineering theory. Finally, candidates will write and defend a dissertation, in which they develop new results in software engineering.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Be able to explain, apply, and extend basic software engineering methodologies.
- Be able to teach software engineering theory and methodology, and advise doctoral students.
- Be able to apply advanced software engineering methodologies in industrial, governmental, and university research organizations.
- Be able to develop new software engineering methodologies.
- Be able to serve as research collaborators, consultants, and team leaders.
- Be able to demonstrate proficiency in software architecture design, software engineering management, requirement analysis, and the interpretation of software-quality matrices.

- Be able to demonstrate awareness of the problems involved in software development and engineering management.
- Be able to initiate a new software engineering project and apply software engineering methodology to the project life cycle.
- Be able to demonstrate proficiency in presentation and publication of software engineering research findings.

Ph.D. in Software Engineering Requirements

The completion of at least 30 semester credit hours of graduate courses in the major field of study, 18 credit hours of thesis, includes:

- 12 credit hours o required Software engineering courses SEN920, 985, or other approved courses
- 6 credit hours in applied mathematics selected from the following:
  AMN, 912, 920, 921, 930 and 940 or other approved courses
- 12 credit hours of electives from SEN 980,984, 992 or other approved courses.
- 18 credit hours of thesis.

Master of Business Administration

The MBA is designed as a balanced preparation for managerial careers in business. Its purpose is to prepare students for responsible positions in a rapidly changing world; to develop an attitude of intellectual curiosity to foster a program of continuous learning throughout life; and to study management as a unique function applicable to all types of endeavors which involve the coordination of people and material resources toward given objectives.

Program Learning Outcomes:

Upon completion of this program, graduates will:

- Be able to make ethical decisions in a business context.
- Understand various aspects of a business environment, including legal, regulatory, political, social, and technical.
- Be able to write financial reporting and conduct market analyses.
- Know how to operate a business in the international arena with awareness and sensitivity to foreign cultures.
- Understand the creation and distribution of goods and services.
- Understand human behavior in organizations, including the ability to lead and work in teams.
- Be able to effectively demonstrate verbal and written communication skills.
- Be able to apply quantitative analysis.
- Be able to demonstrate multicultural awareness.
- Be able to assume a leadership role.
- Know integrative and cross-functional pedagogy, linking business theory with business practice, to critically analyze current problems.
- Know how to customize SAP on business modules.

MBA Requirement:

The completion of at least 36 semester credit hours of graduate courses and/ or thesis or project, including;

- 6 Credit hours in core courses: ACTN 900, ACTN 910, ECON 920, FINN 932 or other approved courses
- 3 credit hours in joint seminar: GRN997
- 6 Credit hours in major concentrations courses
- 21 credit hours in elective course, project or thesis upon approval by the advisor. Choose elective courses from the Accounting, Multimedia Marketing, Management, Finance, Economics, Acting, IT Security and Decision Information Sciences course offerings or other approved offerings.

Doctor of Business Administration

The degree of Doctor of Business Administration (DBA), offered by the International Technological University (ITU), is a research doctorate that focuses upon business practice, and the application of theory rather than on the development of new theory. The DBA is a professional doctoral program intended for Executives, Managers, Consultants, and Instructors of business who want to expand their knowledge, and skills. A combination of analysis, practice, and research is used to equip the students with an understanding of management practices, as well as real-world understanding of business administration principles and thoughts. As an international business school, ITU bridges the gap between learning and its application.

Program Student Learning Outcomes :

Upon completion of this program, graduates will:
- Understand research design and methods necessary to undertake a doctoral-level research project.
- Be able to design, implement, and evaluate a major research project dealing with business and managerial issues in the context of effectively managing technology, innovation and change in a business environment.
- Be able to demonstrate the capacity to conduct original research and to apply, test, and/or examine ideas, whether they're own or those of others.
- Understand the relationship between their own research theme and associated literature and the wider corpus of knowledge.
- Be able to achieve a greater level of effectiveness as a professional practitioner in managing technology, innovation and related organizational change.
- Be able to perform in management consulting, in-company action research, and academic research, leading to publication of work in internationally acclaimed refereed journals.

Doctor of Business Administration Requirements:
- Resume
- Completed application form
- A two written pages on the topic being proposed
- MBA or a relevant Masters Degree and work experience
- Official transcripts of graduate and undergraduate degrees
- GMAT or GRE examination: you are required to take the GMAT or GRE examination (within 10 years prior to application to the program) and have the test score results sent to the university (exceptions to this examination can be made by the academic quality control committee)

- English language proficiency: If your native language is not English, you must supply evidence of English language proficiency, such as score of 550 or higher on the TOEFL or other evidence (exceptions to this requirement can be made by academic quality control committee)
- **Recommendations** Three written recommendations attesting your ability to succeed in a doctoral program are required.
- **Statement of purpose** A statement of purpose of approximately 1,000 words is required. This statement should address your reasons for seeking the doctoral degree and how the doctorate will advance your personal and career goals.
- The DBA may not be completed in less than three years. The maximum time allowed is seven years, during which the candidate works under a supervisor, who is also a member of the jury before which the candidate will defend his or her dissertation.
- Candidates are expected to have a cumulative grade point average (GPA) of 3.0 or higher in a relevant, accredited master's program.

General Requirement of Specialized curriculum:

English as Second Language (ESL):

Program Description:

English as a Second Language Program is designed to provide and enhance the non-native English speaker the opportunity to enroll in specific course tailored to promote fluency in the English language. Students will be given a standardized Academic English test, and scores from their TOEFL or IELTS will also be considered before placement into this program. Each ESL Program class focuses on the skills needed to help non-native speakers achieve advanced English language proficiency. A variety of topics and methodology are offered in support of our student-centered philosophy. Students who have already enrolled in an academic program may choose to enroll in one of these courses, but must have satisfactory test scores and approval of the English/ESL department head, or academic advisor.

Program Student Learning Outcomes:

Upon completion of this program, graduates will:
- Be able to promote fluency in the English language.
- Be able to read , write , listen , and speak to achieve advanced proficiency language.
- Know the basic grammar and its functionality.
- Understand a variety of topics and methodology in support of student centered philosophy.
- Be familiar with all the academic skills.
- Understand global communication technology

ESL Requirements:
- Student needs to meet admission requirement,
- Classes offered in 15-week semesters,
- Beginning, Intermediate and advanced English instruction,
- Courses in: Reading, Writing, Listening, Speaking, Grammar, and Academic Skills

- TOEFL preparation classes

Initial Requirements:
- Students should take English Placement Test,
- Achieve a cumulative grade point average of at least 2.00,
- English Test Requirement for Acceptance: Take the Test of English as a Foreign Language (TOEFL) within five years prior to admission. The minimum admission score is 213 on new grading system,
- For ESL in English as a Second Language Program need to successfully complete a total of at least 36 credit hours, of which 21 credits of concentration courses and 15 credits of elective courses. Students with a lack of English proficiency should complete the 12 credits foundation courses before taking concentration or elective courses.

6. Course Descriptions

A descriptor followed by a number identifies a course. The descriptors are AMN (applied mathematics), CSN (computer science), MMN (multimedia), CEN (computer engineering), EEN (electrical engineering), SEN (software engineering), MBAN (Master of Business Administration), ACTN (accounting), ECON (economics), DISN (decision and information science), FINN (finance), FINA (Fine Arts), MGTN (management), and MKTN (marketing) MISY (Management Information System), HRMG (Human Resource Management), BUS (Business), . In general, the undergraduate courses are assigned the course numbers at the 100, 200, 300 and 400 levels. Most all of these courses are 3 credit units. The graduate courses are assigned the course numbers at the 500, 600, 700, 800 & 900 levels. All 500, 600 & 700 block courses have 2 credit unit awards and the same course title with an 800 or 900 block awards 3 credit units. All 500, 600, & 700 block courses therefore have an 800 & 900 equivalent, and visa versa. The doctorate courses are assigned 800 and 900 numbers. This number system is generated for the same course (with differing credit units) to preserve the preexisting database of courses taken from previously enrolled students.

Prerequisite Requirements

All courses listing a prerequisite requirement can be petitioned by the student for waiver and evaluated by the Academic Committee on a case-by-case basis.

APPLIED MATHEMATICS (AMN)

AMN 301 Advanced Calculus I (3 credit hours)

This course will cover topics that are fundamentals to the single variable calculus, such as limits and function continuity, derivatives and its applications, integration and its applications, transcendental functions and important techniques of integration. The main goal of this course is to teach students to grasp the fundamental concepts and theories of single-variable calculus as well as its application in engineering and sciences. Prerequisite: None

AMN 302 Advanced Calculus II (3 credit hours)

This course will cover topics that are fundamentals to the multivariable calculus, such as infinite sequences and series, vectors and fields, multi-variable function limits, multiple integrals and its applications, and differential equations. The main goal of this course is to teach students to grasp the fundamental concepts and theories of multi-variable calculus as well as its application in engineering and sciences. Prerequisite: AMN 301

AMN 310 Linear Algebra I (3 credit hours)
Vector Spaces, linear transformations, matrix algebra, Eigen values and eigenvectors, and inner products, and Euclidean spaces. Prerequisite: AMN 302

AMN 322 Introduction to Probability and Statistics I (3 credit hours)
Kolmogorov's axioms; conditional probability; independence; random variables; discrete and continuous probability distributions; expectation; moment-generating functions; weak law of large numbers; central limit theorem. Prerequisite: AMN 302

AMN 340 Introduction to Discrete Mathematics (3 credit hours)
Permutations, combinations, set theory, partitions, algebraic structures, groups and rings, generating functions, graphs, algorithms, lattices, Boolean algebra, complexity analysis, completeness and incompleteness. Prerequisite: AMN 310

AMN 910 Integral Transformations (3 credit hours)
Laplace transform and its application in ordinary and partial differential equations, Fourier analysis, Fourier integral, Fourier transformation and its applications in partial differential equations. Prerequisites: AMN 302 and AMN 301

AMN 912 Applied Partial Differential Equations (3 credit hours)
This course is designed for Computer/Electrical engineering graduate students to provide them with problem solving analytical capabilities in Semiconductor Device Modeling, Electromagnetic Fields & Waves, Quantum Mechanics, and Transport Phenomena. The course contents covers topics of analytic methods to solve linear and non-linear partial equations, such as Method of Characteristics, Separation of Variables, Eigen function Expansion Methods, Green's Functions Methods, Perturbation and Asymptotic Methods, Similarity Method and Inverse Scattering Methods, Stability and Bifurcation will also be discussed. Prerequisite: Undergraduate course in differential equations or engineering Mathematics

AMN 920 Optimization Techniques I (3 credit hours)
Basic concepts, unconstrained optimization, linear programming, simplex method, degeneracy, multidimensional optimization problems involving equality or inequality constraints by gradient and non gradient methods. Prerequisite: AMN 930

AMN 921 Optimization Techniques II (3 credit hours)
Combinatorial optimization, Hopfield neural network model, Simulated Annealing and Stochastic machines, mean field annealing, genetic algorithms, Applications to: Tab search, traveling salesman problems, telecommunications problems, quadratic 0-1 & quadratic assignment problems, graph partition

and graph bipartition problems, point pattern matching problems, multiprocessor scheduling problems. Prerequisite: AMN 920

AMN 930 Numerical Analysis (3 credit hours)
Numerical solution of linear system of equations by direct method and iterative method, numerical least square problem, Eigen value problem, numerical solution of non-linear systems of equations and optimization problem.   Prerequisites: AMN 301, AMN 302 and AMN 310

AMN 940 Discrete Mathematics (3 credit hours)
This course covers topics that are important in the development of computer algorithms and data structures, such as mathematical induction, asymptotic notations, recurrences, infinite series summations, graphs, digraphs, trees and counting combinatory and discrete probabilities analysis and statistical quality control. Prerequisite: AMN340

AMN 950 Fast Fourier Transformations and Applications (3 credit hours)
This course is designed to provide electrical/computer engineering and applied mathematics graduate students with the background knowledge of Fourier Transformations (FT), Discrete Fourier Transformations (DFT) and Fast Fourier Transformations (FFT). The applications of FFT in Filter Design, Signal Processing and Image Processing are also included in this course. Prerequisite: AMN 510

AMN 952 Probability and Statistics for Engineers (3 credit hours)
Treatment of data, probability, probability distribution, probability density, sampling distribution, inferences concerning means and variance, non-parametric tests. Prerequisites: AMN 301 and AMN 302

AMN 996 Independent Study (3 credit hours)
By arrangement with instructor. Independent study of topics of special interest in applied mathematics under the direction of an instructor, who is knowledgeable in the field. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: Graduate standing

COMPUTER SCIENCE (CSN)

CSN 300 Introduction to Computer Science (3 credit hours)
This course is designed as the first course for all beginning students majoring in Computer Science or Computer Engineering. Topics include data storage and data manipulation, computer hardware configuration, operating systems, computer software, computer networks, programming languages, algorithms, data structures and file structures, theory of computation and software applications. Prerequisite: None

CSN 321 Logic Design (3 credit hours)
Basic switching circuit and logic design concepts. Noise Margin, propagation delay, Boolean algebra. Minimization techniques,

including Karnaugh maps and QM techniques. Combinational circuit design with MUXs, PLAs, and ROMs. Prerequisite: None

CSN 324 Introduction to Microprocessors (3 credit hours)
Overview of microprocessor organization, hardware-software tradeoffs. Survey of microprocessor architectures and assembly languages, LSI memory chips, memory section design, LSI I/O techniques, interrupts, DMA channels, microcomputer development systems, and microcomputer development systems. Prerequisite: CSN 321

CSN 360 Introduction to Computer Networks (3 credit hours)
This course is designed as an introduction to computer networks. General networking theory such as the 7-layer OSL model will be covered. In addition, emphasis will be placed on the network technologies that are used in corporate networks today. Prerequisite: None

CSN 363 Java Script for Interactive Web Page (3 credit hours)
This course introduces JavaScript, which can make HTML more powerful and dynamic. The topics covered are as follows: Create dynamic images, frames, dynamically update pages, JavaScript and cookies, plug-ins, cascading style sheets, and debugging. After finishing this course, the student will have a better picture of client side vs. server side, HTML vs. JavaScript and integrate JavaScript into web pages to create dynamic images, add smart forms, and detect which browsers and plug-ins that visitors are using so that one can customize the content. Prerequisite: CSN 364 or CSN 381

CSN 364 Introduction to Programming Using Java (3 credit hours)
This course covers concepts, software development; data types, constants and variable declarations; Input/output, operators and arithmetic expressions, logical and relational operators; Control structures, selection, binary selection and multi-way selection; Control statements: repetition; Arrays and strings; Object oriented programming using objects and classes; Exceptions; streams I/O. Prerequisite: None

CSN 377 Introduction to Operating Systems (3 credit hours)
Introduction to operating systems organization. Management of memory, processors, and other system resources, deadlock problems, and avoidance. Process interaction and communication. Sharing and protection of processes and data. File structures. Implementation considerations. Prerequisite: CSN 382

CSN 378 Introduction to Database Systems (3 credit hours)
File organization. Hierarchical, network, and relational data models. Database design techniques based on integrity constraints and normalization. Database languages; protection backup and recovery, concurrency control. Prerequisite: CSN 382

CSN 381 C Programming Languages (3 credit hours)
Programming in C language, with emphasis on structured programming. The following topics will be covered: functions, operators, variables, loops, pointers, input/output, data types, structures, arrays, unions, and disk files. Prerequisite: None

CSN 382 Data Structures (3 credit hours)

An introduction to abstract data structure used to store, access, and manipulate information in computer programming applications. The following topics will be covered: Stacks, recursion, queues, lists, trees, string processing, sorting and searching. Prerequisite: CSN 364 or CSN 381

CSN 800 Software Engineering I (3 credit hours)

Requirements specification techniques, software design technique and tools, implementation issues, and software engineering and programming languages. Prerequisite: CSN 382

CSN 810 Digital Design I (3 credit hours)

Switching algebras, combinational circuits, minimization techniques, and sequential circuits. Analysis of synchronous sequential circuits, counters, shift registers, etc. use of CAD tools. Prerequisite: CSN 321

CSN 822 Introduction to Computer Architecture (3 credit hours)

Overview of computer systems, CPU design, computer arithmetic, microprogramming techniques, design of main memory, memory hierarchies and management, input/output subsystem organization, interrupt handling and DMA channels. Lab projects include design and implementation of a CPU based on a bit-slice microprocessor. Prerequisites: CSN 321, CSN 324

CSN 830 Software Testing & Quality Engineering (3 credit hours)

Modern testing techniques based on black box or behavior testing, control flow and data flow testing, transaction based and finite state testing, domain testing, reliability testing, software reliability models, tools and automation. Prerequisites: CSN 364, 374 and 464

CSN 835 Internet Architectures (3 credit hours)

The goal of this course is to provide students with a broad and deep understanding of the Internet. The topics include unicast routing, protocols, multicast routing protocols, Transport Protocols, Traffic Engineering, Multiprotocol Label Switching (MPLS), Generalized MPLS, Quality of Services, Queuing in Packet Switches, Switch Fabrics, Packet Processing, VPNs, and Mobile IP. The course also provides students with an opportunity to design and write networking programs. Prerequisite: None

CSN 850 Modern Physics for Engineers (3 credit hours)

The material covered in this course is concerned with fundamental topics in modern physics with extensive applications in science and engineering. Topics covered are as follows: the particle nature of matter, matter waves, quantum mechanics in one dimension and three dimensions, tunneling phenomena, crystal structure, statistical physics, and semiconductor theory and devices. Prerequisites: AMN 301, AMN 302 & College Physics

CSN 851 PERL Programming (3 credit hours)

An acronym for "Practical Extraction and Report Language", PERL gained attention in the explosion of Internet as a quick and effective way to create applications that provide much of the web's interactivity. Now, PERL is an industry standard and popularly

interpreted programming language known for its power and flexibility. It combines the familiar syntax of C, C++, and scripting languages into a tool that is more powerful than the separate pieces used together.   PERL is available on virtually every computer platform, and is used in all types of application, including Web and Internet applications, generic software testing script writing for automating tests, system administration and many other fields of applications. This course will teach basic PERL data structures, flow control, basic I/O, operators, strings, arrays, regular expressions and subroutines.   Prerequisites: Any programming language knowledge is helpful, but not required. UNIX experience is helpful too.

CSN 853 Microelectronic and Integrated Circuit Engineering (3 credit hours)

Analysis and design of passive devices, resistors, capacitors, diode, MOSFETS and BJT, their principle, fabrication technology and small signal modeling. Inverters, static and dynamic CMOS logic gates. SPICE simulation of circuits. Device layout and RC extraction. Prerequisite: CSN 321

CSN 860 Introduction to Communication Systems (3 credit hours)

This course provides an introduction to both digital and analog communications systems. Topics covered include signal representation in communication systems, principles underlying major components of digital and analog communication systems with an emphasis on modulation and demodulation methods. It intends to provide necessary background and technical skills to work professionally in communication systems. Prerequisite: None

CSN 861 Bluetooth Implementation and Wireless LAN (3 credit hours)

Bluetooth is a global specification for wireless connectivity that allows phones, PDAs and other portable devices to connect to each other and transmit voice and data by radio in open air rather than cables. 802.11 is a wireless LAN protocol that is increasingly gaining industry support. This course provides an overview of each of these technologies, their unique capabilities, advantages and disadvantages. Students will understand protocol concepts, and do hands-on programming projects about software implementation. Software components including protocol stack design, MAC layer firmware design, performance issues, power management and application development are addressed. Prerequisite: CSN 381

CSN 864 Java Programming (3 credit hours)

Introduction to Java, Application versus Applenet, Installing Java, variables, types, expressions, control constructs, java.lang, Strings, Vectors, Hash tables, File I/O, The Java AWT, components, events, layout managers, Improved GUI libraries, Threads, Synchronization, Java intervals, Sockets, Writing a server and a client. Prerequisites: CSN 381 and CSN 481

CSN 866 Routing in the Computer Network (3 credit hours)

This course introduces different routing protocols (RIP, IGRP, EIGRP, OSPF, IS-IS and BGP) as well as new developments (multicasting and MPLS). Students will learn interior and exterior routing protocols that are currently being used in the Internet. In

addition, they will study multicast routing and multi-protocol layer switching (MPLS). Prerequisite: CSN 360

CSN 869 Optical Networking (3 credit hours)

This course is designed for Computer Science/Computer Engineering senior/graduate students to provide them fundamental knowledge in optical communication and networking methods and enabling technologies. The course introduction to optical fiber characteristics, optical networking components, physical layer systems: 10M/100M/ 1GE/10GE Ethernet, OC-3/OC-12/OC-48/OC-192 SONET Rings and ADMs, Ethernet, L. Bridges and switches. Prerequisites: A basic course in Telecommunication

CSN 881 Introduction to C++ Programming Language (3 credit hours)

This course introduces the student to Object Oriented Programming through general C++. No IDE (MS Visual C++, Borland OWL, etc.) will be taught. It covers specification and implementation of classes; access modifiers to support information hiding; constructors, destructors and memory management; class inheritance, virtual functions and runtime binding; overloaded operators, isopteran library. Not covered are exception-handling, templates, STL, and iterations.
 Prerequisite: CSN 381

CSN 882 Oracle Database Architecture and Administration I (3 credit hours)

The course is composed of two parts: Oracle Architecture and Administration. The first part gives a comprehensive picture of Oracle architecture and discusses the concept of Oracle database and instance. The second part shows students how to create Oracle database, allocating system storage and planning for future storage requirements, creating and modifying database storage structure and objects, and controlling and monitoring user access to the database.
Prerequisite: CSN 378

CSN 884 UNIX Networking Programming (3 credit hours)

The course will cover in detail the different interposes communication (IPC) facilities available under the Unix operating system to develop distributed applications in a network environment. Distributed application components can be executed on the same machine, or on different machines, or a combination. These IPC facilities have two main attributes, the IPC interface and the network protocol. The course covers in detail the following interfaces: pipes, FIFO, shared memory, message queues, semaphores, sockets, system V Transport Layer Interface (TLI), and Remote Procedure Calls(RPC). In addition, we cover a useful set of network routines that simplifies distributed programming. Prerequisites: CSN 381, CSN 382 and SEN 556

CSN 885 Introduction to Linux/Unix Operating System (3 credit hours)

Linux operating system is a multi-user, multi-tasking operating system that runs on many platforms, including Intel Pentium, Intel Strong/Arm, Motorola MC68K, and Power PC processors. It implements a superset of the POSIX standard. Linux interoperates with other operating systems, including those of

Microsoft, Apple, and Novell. In addition, Linux supports a wide range of software including X-windows; TCP/IP networking (including SLIP, PPP, and ISDN) protocols etc. It has been one of the most fast growing operating systems with over 10 million users and/or systems installed world wide, and is one of the major emerging operating systems. Prerequisite: None

CSN 886 Software Design Using Unified Modeling Language (UML) (3 credit hours)

This course is an introduction to object-oriented principles of software design using the Unified Modeling Language (UML). Object oriented systems offer the promise of constructing highly modular and reusable software components. In this course we will discuss what is meant by object oriented design from analysis, through system design to programming implementation. The course will focus on building the object-oriented (OO) analysis model for software engineering. Then it defines in depth principles of object orientation reviewing the characteristics that actually comprise a true object. The course covers the gathering of requirements for software design, software project organization & management, the role of design, use-case analysis, object modeling in software engineering and an introduction to design patterns. UML is presented in context throughout the discussion with emphasis on the practical application of OO principles and techniques, including the use of UML to solve real-world problems. Students are expected to write a detailed description of the design for each of the programs, incorporating UML models where appropriate. Students will implement their programs in the Java programming language. Prerequisites: CSN 374, CSN 382. Students should be familiar with Java, C++ or other language, some web programming as well as basic data structure concepts and some UNIX.

CSN 892 Computer Graphics (3 credit hours)

Historical development of computer graphics, black and white graphics programming, color raster graphics, resolution and memory requirements, look-up tables, vector graphics and matrices, surfaces, rotation and scaling, graphics primitive, and transformation.
Prerequisite: AMN 340

CSN 896 Independent Study (3 credit hours)

By arrangement with instructor. Independent study of topics of special interest in computer science under the direction of an instructor. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: None

COMPUTER ENGINEERING (CEN)

CEN 910 Digital Design I (3 credit hours)

Analysis and synthesis of combinatorial and sequential digital circuits with attention to static, dynamic, and essential hazards. Algorithmic techniques for logic minimization, state reductions, and state assignments. Decomposition of state machine, algorithmic state machine. Design for test concepts.

CEN 911 VLSI Design Fundamentals (3 credit hours)
> Fault simulation and testing of VLSI circuits, symbolic layout, yield analysis and advanced topics, place & route, VLSI CAD tools, programmable arrays, and ASIC concepts. Prerequisite: CEN 911

CEN 932 Network Management (3 credit hours)
> Basic principles and functionality of network management systems, introduction to network management protocols, i.e., Simple Network Management Protocol (SNMP), remote monitor functionality and network security, and future trends in network management tools and technologies. Prerequisite: CSN 382 and CSN 360

CEN 933 Digital Signal Processing I (3 credit hours)
> Discrete time signals and systems and properties, analysis of discrete time systems, structures for discrete time systems, and properties of analog filters and frequency transformations. Prerequisite: AMN 620

CEN 935 Internet Architectures (3 credit hours)
> The goal of this course is to provide students with a broad and deep understanding of the Internet. The topics include Unicast Routing Protocols, Multicast Routing Protocols, Transport Protocols, Traffic Engineering, Multiprotocol Label Switching (MPLS), Generalized MPLS, Quality of Services, Queueing in Packet Switches, Switch Fabrics, Packet Processing VPNs, and Mobile IP. The course also provides students with the opportunity to design and write networking programs. Prerequisite: None

CEN 940 Network Security Techniques (3 credit hours)
> Network security plays a key role in today's network computing environment. This course is designed to familiarize the students with fundamentals of network security issues, techniques, and applications. Topics include: introduction to computer networks, cryptography, secret and public key algorithms, authentication systems, digital signature, and secured e-mail systems. Some current hot topics, such as Internet security, e-commerce, and Virtual Private Network (VPN) will also be briefly covered. Prerequisite: None

CEN 950 FPGA Design (3 credit hours)
> The fast growing FPGA (Field Programmable Gate Array) provides a quick prototyping and flexible design choice in digital system. This course offers a balanced study between academic and practical approaches. It covers the basic concept of PFGA such as architecture, design flow and the advantages vs. its limitations. By working on a mini-project, students can develop solid understanding and hands-on experience in this exciting digital design area. Good understanding of digital design principle is required. Knowledge of HDL (Hardware Description Language), such as VERILOG or VHDL, is not required but is very helpful. Prerequisite: CEN 910

CEN 951 Computer Architecture I (3 credit hours)
> Instruction set design, processing unit, control unit, microprogramming, memory, and input/output subsystem.

Prerequisite: None

CEN 952 Digital Design with Verilog HDL (3 credit hours)
Hardware description language, algorithmic approach to digital design, design specification, synthesis, designs with gate arrays, simulation of digital design, and CAD tools and lab.
Prerequisite: CEN 951

CEN 954 ASIC Design Modeling (3 credit hours)
The goal of this course is to provide students a broad and practical understanding of the ASIC design process and issues. The topics include design techniques, design for test, design methodology, design verification and various tools used in the design process. Prerequisites: CEN 910 and familiarity with digital design and electronic circuits. Prior knowledge of Verilog or other programming language is not required but highly recommended.

CEN 959 Operating Systems I (3 credit hours)
Process management, memory management, scheduling, concurrent processing, synchronization mechanisms, resource allocation, resources, deadlock, and file systems. Prerequisite: CSN 382

CEN 960 Computer Communication Networks, TCP/IP (3 credit hours)
The course covers a detailed analysis for network topology, connectivity and routing design issues. An overview of graph theory algorithms used for the design of computer networks. Introduction to queuing theory techniques for the calculation of network delays. Network backbone design, local access design, basic protocol modeling and verification. Prerequisite: None

CEN 961 Bluetooth Implementation and Wireless LAN (3 credit hours)
Bluetooth is a global specification for wireless connectivity that allows phones, PDAs and other portable devices to connect to each other and transmit voice and data by radio in open air rather than cables. 802.11 is a wireless LAN protocol that is increasingly gaining industry support. This course provides an overview of each of these technologies, their unique capabilities, advantages and disadvantages. Students will understand protocol concepts, and do hands-on programming projects about software implementation. Software components including protocol stack design, MAC layer firmware design, performance issues, power management and application development are addressed.
Prerequisite: CSN 381

CEN 962 Design of Embedded Computing Systems (3 credit hours)
This course provides and overview and a hands-on experience of the different phases of the design process of the embedded computing systems. The design phases span the process spectrum from requirements through manufacturing phases. The alternatives and choices available to the designer in every phase are studied together with the rationale for choosing one alternative over the other. The student will become familiar with the phases involved in an embedded computing system design project, and will be familiar with some of the tools and choices

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available at every phase. The student will also be able to decide which alternatives better suit that project's specific requirements.
Prerequisites: CSN 321 and CSN 324

CEN 963 Switching in Computer Networks (3 credit hours)

This course focuses on switching theory in computer networks. The course covers LAN switching techniques, including bridging, VLANs and trunking. The course also covers different switch fabrics, including input-buffered/input-output-buffered switches, shared-memory switches, banyan switches, knockout switches, abacus switches, cross point-buffered switches, Clos-Network switches and wireless ATM switches. Furthermore, this course studies IP switching, in particular MPLS technology, including MPLS traffic engineering and MPLS/VPN.
Prerequisite: CSN 360

CEN 964 Computer Interface and Firmware Engineering (3 credit hours)

As computers have been widely used almost everywhere, from intranet to Internet, from personal uses to large-scale business applications, there are strong, increasing demands for computer-based industrial automation and instrument control. This is often referred as computer interface, the bridge between hardware and software. This course is designed to overview various hardware interfaces that are practically used in industries as well as software that can communicate through these interfaces. Specifically it introduces communications through the serial and the parallel ports, RS232 and GPIB interfaces, I/O buses, and device drivers written in C/C++. Besides this course will also discuss microprocessor embedded systems and high-level graphical user interface (GUI) programming. Experimental examples are presented in the class and students are given with practical projects for solving real-world problems.
Prerequisites: CSN 381, SEN 909, CEN 0 and CEN 951

CEN 965 Local Area Networks (3 credit hours)

CEN 966 Routing in Computer Networks (3 credit hours)

This course introduces different routing protocols (RIP, IGRP, EIGRP, OSPF, IS-IS and BGP) as well as new developments (multicasting and MPLS). Students will learn interior and exterior routing protocols that are currently being used in the Internet. In addition, they will study multicast routing and multi-protocol layer switching (MPLS).
Prerequisite: CSN 360

CEN 968 Design and Maintenance of Commercial Websites (3 Credit hours)

This course focuses on the basic concepts of setup, designing and maintaining commercial websites. It introduces both the principles and skills of building websites that people will visit, use, bookmark and revisit. It covers the entire website building process from server setup and site planning to the designs of both the server-side storage and the client-side presentation. This course

represents 45 contact hours of instruction required for 3 semester units or credits.

CEN 969 Optical Networking (3 credit hours)
This course is designed for Computer Science/Computer Engineering senior/graduate students to provide them fundamental knowledge in optical communication and networking methods and enabling technologies. The course introduction to optical fiber characteristics, optical networking components, physical layer systems: 10M/100M/ 1GE/10GE Ethernet, OC-3/OC-12/OC-48/OC-192 SONET Rings and ADMs, Ethernet, L. Bridges and switches
Prerequisites: A basic course in Telecommunication

CEN 971 Storage Area Network (SAN) Implementation (3 credit hours)
In this comprehensive, practical course, the instructor will cover all aspects of storage networking. First, the theory of how a SAN can help consolidate conventional server storage onto networks will be explained. Understanding includes how a SAN can help make applications highly available no matter how much data is being stored, which, in turn, makes data access and management faster and easier. The course will provide students with practical advice on the design and implementation of this new technology and how it works to make the decision to adopt storage networking easier. Students will understand the theory of SAN technology, and appreciate the benefits of SAN. This course provide a detailed up-to-date coverage on the following topics: The evolution of computing in data centers leading to SANs, killer applications for SAN technology, storage networking theory, its meaning to an enterprise information processing architecture, software components required to implement, and practical issues in SAN implementation and management. Prerequisite: CEN 963

CEN 973 Neural Networks I (3 credit hours)
Neuronal activity and mathematical models, perception type machines and learning, cerebellar models (work by Marr, Albus, Pellionisz and Llinas), parallel distributed processing (work by Hopfield, Grossberg MeClelland and Rumelhart), and feedforward and feedback networks. Prerequisite: AMN 920

CEN 974 Neural Networks II (3 credit hours)
Application of neural networks, architectures for neural networks and projects. Prerequisite: AMN 920

CEN 996 Independent Study (3 credit hours)
By arrangement with instructor. Independent study of topics of special interest in computer engineering under the direction of an instructor, who is knowledgeable in the field. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: Graduate standing

CEN 998 M.S. Project (3 or 6 credit hours)
By arrangement with project advisor. A nominal number of 2 or 4 credit hours is expected toward the M.S. degree if the Project Option is selected. Conduct independent research of an approved topic in computer engineering, prepare a technical report, and

defend it before a faculty advisor.   Prerequisite: Graduate standing

CEN 999 M.S. Thesis (6 credit hours)
By arrangement with thesis advisor. A nominal number of 6 credit hours is expected toward the M.S. degree if the Thesis Option is selected. Conduct independent research of an approved topic in computer engineering, prepare a thesis, and defend it before a committee composed of a number of faculty designated by department chair. Prerequisite: Graduate standing.

DIGITAL ARTS (MMM)

MMM901 Story Visualization (6 credit hours)
In this course the student will focus on scripting, storyboarding and techniques used in creating and portraying a story. The student will focus on process rather than production.

MMM902 Design (6 credit hours)
In this course students will use design as form of visual communication. This course introduces the basic principles to solve design problems and the ability to demonstrate effective use of color, typography, and production skills by using industry standard software. Students will explore the use tools, techniques and design layout principles to produce professional designs.

MMM903 Animation (6 credit hours)
In this course students will understand the basics of modeling, positioning and rendering 3-D objects. Students will understand Animation language, software and provide the necessary design skills and techniques employed by 3-D animation. Students will develop an understanding and use of a wide variety of applications used in animation.

MMM904 Sound Design (6 credit hours)
This course provides an introduction to sound design principles for multimedia in a broad and diverse manner. Students will develop skills in recording, digital editing and mixing with industry standard software and techniques.

MMM905 Creating Story (6 credit hours)
This course provides a variety of story development techniques for shaping a compelling story. The students will learn the fundamentals to demonstrate and adapt stories into a specific project.

MMM906 Archetypes (6 credit hours)
Students will learn to develop characters that will come alive. This class will help the student understand the importance of adding depth, detailed background, and distinctive characters who correspond to their thoughts and action.

MMM907 Acting (6 credit hours)
In this course the students will learn the basic techniques of acting. This class will explore the creativity of finding emotions in

acting and conveying it to the audience. Physical exploration, monologues, Improved and rehearsed scenes will give the students the necessary tools to succeed in acting.

MMM908 Camera Workshop (6 credit hours)
This workshop will teach students the fundamentals for video and lighting. This course will cover equipment, procedures and methodology useful for documentaries, dramatic and industrial projects. Learn useful techniques more effectively to develop your styles.

MMM909 Editing (6 credit hours)
In this course the students will develop the skills and knowledge to create and edit high quality projects in a professional environment. Hands-on experience in basic and advanced video editing, sound, and all other aspects leading to a finished product.

MMM910 Business Marketing (6 credit hours)
This course will help the students understand and enable the student to develop the challenges encountered in a busy marketing environment. Appreciate and utilize the different marketing functions, the management of these functions and how each function affects others in the marketing domain.

MMM911 Design Web/Graphic (6 credit hours)
This Course student focus on developing and sharpening skills using the appropriate software tools, terminology and design theory's. Students will gain valuable experience in the ideation, execution and presentation of projects.

MMM912 Web Programming/Authoring (6 credit hours)
The web programming/authoring course includes hands on instruction in the tools and techniques in making a high quality and professional website. Students will gain HTML skills required to create a web page. Software, code, writing, incorporating sound and video will be covered in this course.

MMM913 Copywriting/Journalism (6 credit hours)
This course covers all aspects writing for print, internet and broadcasting. Student will acquire skills to write and articulate various types of advertisement, which includes strategies, proposals, slogans and text copies.

MMM914 3D Art Production (6 credit hours)
This production course gives the student a good technical basis for design quality and introduces the student to the concepts and techniques for 3-D computer graphics. The major focus will be on creating and demonstrating skills in various types of production using the latest software and tools essential to 3-D art.

MMM915 Modeling (3 credit hours)
In this course the students will utilize sophisticated software tools, investigate new techniques and explore 3-d Modeling. Using design principles on the computer to further their understanding of the creative process in constructing Models and environment.

MMM916 Animation (3 credit hours)
>In this course students will understand the basics of modeling, positioning and rendering 3-D objects. Students will understand Animation language, software and provide the necessary design skills and techniques employed by 3-D animation. Students will develop an understanding and use of a wide variety of applications used in animation.

MMM917 Game Development (3 credit hours)
>Students will understand and discuss the process of game development. This course carefully how the technical development and artistic development go hand in hand. This course will investigate in topics such as game engine, sound , rendering, user interface and other facets of Computer Science in Game Development.

MMM918 Preproduction (3 credit hours)
>Students will learn all aspects of preproduction and planning for film and TV. Students will experience the role of producer and learn what it takes to plan and start a project and taking it to completion.

MMM919 Screenwriting (3 credit hours)
>This course is an introduction to writing for the screens. Topics include dialogue, characterization, plot, format, structure and the writing process. Students will learn to examine films from a writers point of view and demonstrate in writing exercises.

MMM920 Lighting (3 credit hours)
>Course introduces film lighting techniques, concepts, terminology related to film and video production. Students will become familiar with standard procedures and hands on experience with lighting equipment. The use of spot meters and light measuring techniques will be covered.

MMM921 Camera (3 credit hours)
>In this course students will achieve a comprehensive overview of camera work. Students will learn camera operation, mounts, movement and framing to make a better project. Focus is creating and showing a understanding of video as an art form in all contexts.

MMM922 Editing (3 credit hours)
>This course will give the students knowledge and experience for video editing. Students will demonstrate thee use of latest editing software, post-production methods, sound editing, titling and effects. Topics include graphic matching, rhythmic editing, continuity and montage editing.

MMM923 Special Effects (3 credit hours)
>This course will teach students how to use the latest industry standard software and demonstrate special effects to help tell a story. Practical usage on projects ranging from high budget to low budget films will be covered as well as enhancing footage.

MMM924 Portfolio Production (3 credit hours)

In this course the students will compose a multi-media portfolio of pass projects and work pieces in DVD format. Students will learn how the portfolio will apply to the job market environments and the important role it plays in the new digital age.

ELECTRICAL ENGINEERING (EEN)

EEN 901 Solid-State Electronics for Integrated Circuits (3 credit hours)

Solid-state electronics for integrated circuits is a lecture/laboratory course designed so that students can obtain hands-on experience on the fabrication and measurement of common semiconductor devices. The course consists of the processing of light emitting diodes, Schottky diodes, metal oxide semiconductor (MOS) capacitors, p-n junction diodes and field-effect transistors. Students start with plain wafers of silicon or gallium arsenide phosphide and have to design, create, and measure their own devices. Laboratory teaching assistants supervise the students in these tasks, instruct them on how to make their own photolithography masks and guide the students through the lithography, pattern transfer, and metallization and device measurement procedures. During the second term of the class, students' build and construct more advanced devices; including MOS field effect transistors, bipolar transistors, micro electromechanical microphones, and laser diodes.

EEN 902 Fundamentals of Semiconductor Physics (3 credit hours)

Crystal structure and crystal binding, introduction to quantum mechanics and quantum statistics, energy band theory, phonon theory of crystal vibrations, equilibrium carrier statistics, recombination-generation processes, carrier transport. Prerequisite: A course in college physics.

EEN 903 Semiconductor Devices and Modeling (3 credit hours)

Semiconductor physics, band theory, drift and diffusion, recombination/generation, P-N junctions in equilibrium forward and reverse bias, breakdown, transient and AC behavior, and bipolar junction theory, switching and frequency limitations. Spice modeling theory and methods

EEN 904 Integrated Circuit Processing & Equipment (3 credit hours)

Review, discuss, and analyze various steps used in IC fabrication; focus on principles, processes, equipment, engineering practice; history and current status of semiconductor industry, semiconductor and process materials, crystal growth and wafer preparation, contamination control and yield, oxidation, rapid thermal processing, photolithography, steppers, X-ray & e-beam lithography, chemical mechanical polishing, doping, ion implantation, deposition (PVD, CVD, Epi), etching, metallization, wafer testing, formation of various devices, manufacturing technology and packaging; design, hardware, software control and process engineering aspect of semiconductor fabrication equipment.

EEN 905 Integrated Circuit Fabrication Processes (3 credit hours)

Principles of IC fabrication processes and characterization of basic semiconductor devices. Basic materials properties.

Process simulation and integration. Principles and practical aspects of fabrication of devices for MOS and bipolar integrated circuits.

EEN 910 Integrated Circuit Design and Method (3 credit hours)
The course is designed to bring students an overview picture of IC design industry. The different IC design methods, their tradeoff and applications. The course project will allow students to practice different approaches of Full-Custom design, ASIC/SOC design and FPGA design.

EEN 911 VLSI Design I – Circuit Design (3 credit hours)
Fundamental considerations involved in VLSI chip design. Various circuit designs are introduced to understand design concepts, techniques and tradeoffs in practical implementations. Physical design aspect of and global issues in chip designs. Design considerations of circuit performance, size and power consumption.

EEN 912 VLSI Design II *(3 credit hours)*
Advanced circuit design consideration and implementation. Various memory design concepts, techniques, and applications involved DRAM/SDRAM, SRAM/SSRAM, ROM, EPROM, FLASH, etc. Prerequisite: VLSI Design I

EEN 913 Microprocessor Design (3 credit hours)
Introduction to various microprocessor architectures, characteristics, and applications. Study a specific microprocessor design to understand each functional block design and design considerations.

EEN 914 VLSI System Design (SOC) (3 credit hours)
Introduction to ASIC and SoC design fundamentals. VLSI architectures, systolic arrays, self-timed systems. System verification. Design flow and implementation. Design consideration and analysis. Trends in VLSI development.

EEN 915 Analog Circuit Design (3 credit hours)
Design and analysis of multi-stage BJT and CMOS analog amplifiers. Frequency response of cascaded amplifiers and gain-bandwidth considerations. Concepts of feedback, stability, and frequency compensation.

EEN 916 Mixed Signal IC Design (3 credit hours)
The course focuses on the intersection of the digital and analog design worlds. The students are expected to have basic analog circuit and digital design knowledge, and to have used the principal EDA tools like SpectreRF and Verilog. The course will cover SoC system design and mixed signal subsystems such as A/D converters, digital PLLs, embedded CPUs with thermal sensors, DDR PHYs and others. Mixed-signal issues like substrate noise will be explored in detail. The course also includes a significant design project with a simple embedded CPU.

EEN 917 Advanced Analog IC Design (3 credit hours)
This advanced course provides an understanding of analog circuit

and systems design and complex CMOS IC issues. Topics include: high-frequency amplifiers, high-Q oscillators, low-noise circuits, selecting passive components for minimum mismatch, non-linear systems, active filters, A/D and D/A converters, grounding and shielding, layout and system design. As part of the course, you will design a medium-complexity analog circuit starting from performance and parametric specifications. Heavy use of HSPICE and some electromagnetic modeling.

EEN 918 RF IC Design (3 credit hours)
This advanced course will cover CMOS RFIC design. The course starts with basic electromagnetics like high-Q inductor design, then moves into device modeling and layout issues. The primary CMOS RF subcircuits like LNAs, power amplifiers, fractional N synthesizers, mixers, filters, local oscillators and baluns will be examined in detail. Supporting mixed signal circuits like A/D converters and baseband filter-amplifier blocks will also be explained. Finally, RF system analysis will be explored and applied in calculating overall link budgets, receiver noise figure and gain and filter bandwidth requirements.

EEN919 Low Power IC Design (3 credit hours)
Design consideration and techniques for low power IC design. Power estimation and analysis at different design stages. Techniques and tradeoffs in high performance and power critical IC design.

EEN921 Computer-Aided Design of Integrated Circuits (3 credit hours)
Cover a wide variety of topics relating to the development of computer aids for integrated circuit design. The course will emphasize state-of-the-art techniques and both the theoretical basis for the methods as well as the application of results to practical problems, including details of implementation.

EEN 922 Design for Testability (3 credit hours)
Fault modeling: single stuck-at fault (SSF) and multiple stuck-at fault, fault equivalence and dominance, fault simulation techniques: serial, parallel and concurrent, testing algorithms for SSF and bridge fault, functional testing, PLA testing. Memory testing. Introduction of commercial tools and their capabilities.

EEN 923 Logic Synthesis and Equivalence Checking (3 credit hours)
Combinational and sequential synthesis, and equivalence checking are closely related, and the ties between the two are becoming tighter. The goals of these advanced methods are speed, scalability, verifiability, and superior results over classical methods. Recent focus has moved to the sequential domain where new results are leading to greater acceptance of sequential operations such as retiming, register correspondence, and use of approximate unreachable states.

EEN 924 Signal Integrity of High-Speed Digital Circuits (3 credit hours)
Issues in signal integrity of high-speed digital circuits. Identifying signal integrity problems; circuit analysis for transient signals in lumped and distributed circuits; reflection and crosstalk; analysis

of coupled-line systems; current measurement processes for high-speed signals. Current design techniques, rules and procedures.

EEN 925 Introduction to MEMS Design (3 credit hours)
Parametric design and optimal design will be applied to micro-electro-mechanical systems with an emphasis on design. In this class, students will learn microfrbrication techniques. A variety of MEMS structures will be analyzed in this class, including switches, accelerometers and microcavities.

EEN 928 VLSI Design to Silicon (Project) (3 credit hours)
Complete a full custom chip design to silicon. Starting from circuit design and verification, layout and layout verification, LPE and whole chip post-layout verification. The designed chips will be tape-out for manufactory and chips will be packaged and tested.

EEN 931 Nanotechnology I (3 credit hours)
Nanotechnology is the field of fabrication, characterization and manipulation of nanometer scale objects. The course details a step-by-step description of the equipment, facilities processes and process flow needed to fabricate small devices and structures. Students learn processing and manufacturing concerns including process control, contamination, yield, and processing interaction. The students practice design process flows to build micro- and nano-scale devices and systems. The course covers fabrication challenges and break-throughs in semiconductor nanotechnology.

EEN 932 Nanotechnology II (3 credit hours)
Further study on quantum behaviors which mechanic, electronic, magnetic, optical and chemical properties open the door to a new domain of engineered nanostructures and nanodevices, with enormous applications in many aspect of life. Students learn small scale quantum phenomena, device fabrication, analysis and synthesis processes, instrumentation for characterization, integration of nanodevices and systems. *Prerequisite: EEN 931*

EEN 941 Digital Signal Processing (3 credit hours)
Advanced techniques in signal processing. Stochastic signal processing, parametric statistical signal models and adaptive filterings. Application to spectral estimation, speech and audio coding, adaptive equalization, noise cancellation, echo cancellation, and linear prediction.

EEN 942 Digital Image Processing I (3 credit unites)
The course is designed to introduce fundamental knowledge of basic image processing algorithms and systems. The course covers image acquisition, image data structures, images operations such as, geometric, arithmetic, logical convolution, transforms, calibration, correction, enhancement. Matlab will be used to help students grasp the basic skills of processing images on digital computers.

EEN 943 Digital Image Processing II (3 credit unites)
This course is designed to introduce techniques and implement algorithms for advanced digital image processing. The course will cover segmentation, shape and texture, Morphology, recognition

and classification. And compression techniques, real-time image and video coding will be covered. Matlab is used to implement and test various image processing algorithms.

EEN 946 Design of Embedded Systems (3 credit hours)
Principles of embedded system design. Focus on design methodologies and foundations. Platform-based design and communication-based design and their relationship with design time, re-use, and performance. Models of computation and their use in design capture, manipulation, verification, and synthesis. Mapping into architecture and system platforms. Scheduling and real-time requirements. Performance estimation. Simulation techniques for highly programmable platforms. Synthesis and successive refinement.

EEN 950 Quantum Devices I (3 credit hours)
The purpose of this course is to provide the electrical and computer engineering graduate students with the knowledge of principles and operational characteristics of modern semiconductor devices, especially nanometer scale structured semiconductor devices. Main topics to be covered in this course are quantum effects in transport phenomena, tunnel diode, resonant tunneling devices, quantum well confinement and super-lattices. Quantum well devices, surface quantization, integer quantum Hall and fractional quantum Hall effects, low dimensional quantum dots and quantum wires are also covered in this course.

EEN 951 Control Engineering (3 credit hours)
Block diagram & signal flow graph, modeling of electromechanical, hydraulic, pneumatic systems, state variable representation & transfer functions, matrix methods in state space, controllability, observables, and canonic form transformations, pole placement with state feedback and integral control, time domain analysis & stability criteria, root locus & method for output feedback design, and control system simulation.

EEN 952 Digital Control (3 credit hours)
Frequency, stability, design in the frequency domain, introduction to computer control, Z-transform technique, sampling, A/D & D/A conversion, digital redesign, minimum norm and root locus design, state space design, and state observers.

EEN 953 Intelligent Control (3 credit hours)
Artificial intelligent theories, algorithms, and applications. Detection and analysis. Self-learning system. Project of robot system design.

EEN 954 ASIC Design I (3 credit hours)
ASIC design principle and approaches, emphasizing on front-end design consideration and implementation with logical design, verification and synthesis. Design analyses of function, timing, power, signal integrity and others. Completing a design project with an ASIC design flow.

EEN 955 ASIC Design II (3 credit hours)
        ASIC design principle and approaches, emphasizing on back-end design consideration and implementation with placement and routing, layout verification and parameter extraction, design for manufacture and post-layout analysis. Completing a design project with an ASIC design flow.

EEN 958 FPGA Design (3 credit unites)
        The course focuses on FPGA (Field Programmable Gate Array) principles and implementations. It covers FPGA architecture, design flow and application advantages vs. limitations. The course will actualize design projects with FPGA implementation. Students can develop solid understanding and hands-on experience in this exciting digital design area. Knowledge of HDL (Hardware Description Language), VERILOG or VHDL, is pre-required.

EEN960 PARALLEL COMPUTING (3 credit unites)
        The course focuses on parallel computing frameworks and techniques. The course covers cutting-edge techniques which including multiprocessing, multithreading, synchronization, cluster/MPI, cell computing, general purpose GPU (CUDA/STREAM), and stream computing. The course project will be issued for solving/benchmarking some computing intensive problems, such as Monte-Carlo simulations, partial differential equations, image processing, etc, using different parallel computing frameworks.

EEN 961 Network Analysis (3 credit hours)
        Linear graph concepts and definitions, graph matrices and Kirchhoff's equations, matrix loop, node and cut set equations with generalized branch representation, and topological formulas for network functions and their application to computer-aided analysis.

EEN 963 Digital Communications I (3 credit hours)
        Review of probability and random processes, information theory, signal detection, and forms of binary modulation/demodulation. Prerequisite: AMN 910

EEN 964 Computer-Aided Simulation of Electronic Circuits (3 credit hours)
        DC and AC analyses of linear networks, DC analysis of nonlinear resistive networks, linear and nonlinear capacitors and inductors, circuit models for semiconductor devices, and the stability region of numerical integration algorithms. Prerequisite: None

EEN 965 Applied Linear Systems (3 credit hours)
        State equations, and their time and frequency domain solutions, methods for calculating state transition matrix, modes suppression and excitation, state equation for discrete systems and their time and frequency domain solutions, Z-transform and inverse transform sinusoidal steady state analysis and digital filtering, stability in linear time-invariant systems.

EEN 966 Digital Communication Networks (3 credit hours)

This course focuses on basic theory and principles up on today's digital communication and networking technologies. This course covers introductory information and coding theory, baseband transmission systems, its optimum receiver structures, intersymbol interference, equalization. It will discuss application of digital recording systems, various modulation and corresponding demodulation schemes. Network architecture and protocols, medium access control, and switching and routing technologies for wide area networks will be covered.

EEN 968 Application of Analog Integrated System (3 credit hours)

In EEN567, we have focused on the analog circuit fundamentals and the basic op amp and its design. In EEN568, we will study CMOS operational amplifiers with advanced and improved performance. The comparator, widely used in the process of converting analog signals to digital signals, will be taught. The concepts of switched capacitor circuits are also introduced. Digital-analog and analog-digital converters, one of the most important components in analog circuits, will be covered. PLL (phase-locked loop) will also be mentioned.
Prerequisite: EEN 915

EEN 970 Introduction to Microwave Engineering (3 credit hours)

Introduction to high frequency theory, the basic performance, bandwidth, and manufacturing yield of RF and microwave networks. Electromagnetic field theory and mathematical details. The applications of different matrices and their limitations. The basis and use of Smith chart, and filter designs.

EEN 971 Wireless Communication Systems (3 credit hours)

Introduction to wireless communication systems, cellular concept, prediction of propagation loss, and calculation of fades. Modulation techniques. Equalization and diversity techniques. Multiple-access techniques. Wireless systems and standards.

EEN 972 Wireless Communication Networks (3 credit hours)

Wireless signal propagation and modulations methods, amplifier, transmitter, receiver and antenna, sample radio link analysis, frequency licensing and FCC, cellular communication, paging, GPS, wireless data, wireless market.

EEN 974 Electromagnetic Fields and Waves (3 credit hours)

Electromagnetic fields in vacuum and in matter, boundary value problems and Green's functions, retarded potentials, wave propagation, wave-guides and cavities, radiation, dispersion and absorption.

EEN 975 High Speed Digital Systems (3 credit hours)

The practical and theoretical aspects necessary to design modern high-speed digital systems. Topics to be covered are: Transmission line theory, cross talk, connectors, packages, and vias, modeling, SSN (Simultaneous Switching Noise), power delivery system, driver/receiver buffer modeling, clock distribution, digital timing analysis, design methodologies, and other advanced topics.

EEN 977 Green Energy (3 credit hours)

The focus of this class will focus on solar energy, specially the

principles and operational characteristics of modern solar cells. Main topics to be covered in this course are solar energy principles, principles of diode, solar cell, concentrated solar cell, thin film solar cell, multi-cell structure, power conversion and other green energy source (hydro, wind, biomass, etc) comparison.

EEN 995 Special Topics in Electrical Engineering (3 credit hours)
The course provides an opportunity for a faculty member to offer a relatively new subject that is not currently available in the catalog, but is of great relevance to electrical engineering. It may consist of lectures, reading, homework, presentation and project determined by the instructor. Prerequisite: As specified in class schedule

EEN 996 Independent Study (3 credit hours)
By arrangement with instructor. Independent study of topics of special interest in electrical engineering under the direction of an instructor, who is knowledgeable in the field. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: Graduate standing

EEN 998 M.S. Project (3 or 6 credit hours)
By arrangement with project advisor. A nominal number of 3 or 6 credit hours is expected toward the M.S. degree if the Project Option is selected. Conduct independent research of an approved topic in electrical engineering, prepare a technical report, and defend it before a faculty advisor. Prerequisite: Graduate standing

EEN 999 Thesis (6 credit hours)
By arrangement with thesis advisor. A nominal number of 6 credit hours is expected toward the M.S. or PhD degree if the Thesis Option is selected. Conduct independent research of an approved topic in electrical engineering, prepare a thesis, and defend it before a committee composed of a number of faculty designated by department chair.
Prerequisite: Graduate standing

ENGLISH AS A SECONDARY LANGUAGE (ESL)

ESL 101 The Pronunciation of American English (3 credit hours)
This course will cover the phonetics of American English, giving practice in pronunciation. Students will learn how to reduce their native accent with speech articulation. This course teaches ESL learners to hear, identify, and clearly articulate the sounds and patterns in spoken English.

ESL 102 Introduction to ESL - Grammar & Writing (3 credit hours)
An intense review of grammatical structure, of writing skills. This course is designed to promote accurate and appropriate language usage. Students must demonstrate the ability to write effectively in an academic environment consisting of Sentence structure, verb tenses, short essays, and content interpretation.

ESL 103 Introduction to ESL - Vocabulary & Reading (3 credit hours)

This course is designed to enhance the student's word usage and oral reading ability. . Students will review academic word usage relative to homework, study, and modern English. Consisting of essays, reading, understanding articles, reading comprehension, and increased speed.

ESL 104 Introduction to ESL - Listening & Speaking (3 credit hours)
In this class, students will refine oral presentations, focusing on pronunciation and listening skills. Students will receive extensive practice speaking in an academic and professional setting.

ESL 105 Introduction to ESL Lab (3 credit hours)
The lab course will provide the student with more individualized instruction and exercises, combining all the skills attained in the regular class. The lab course is mandatory.

ESL 201 Intermediate Grammar & Writing Skills (3 credit hours)
Students will work on academic writing, critical reading and augmentation, style and organizations of writing, summarizing, paraphrasing, and short essays. Student must submit a final report.

ESL 202 Intermediate Vocabulary & Reading Skills (3 credit hours)
This course is designed to promote class participation as well as practice in formal and informal communication skills, including listening comprehension, pronunciation, conversational, and presentation skills.

ESL 203 Intermediate Listening & Speaking Skills (3 credit hours)
Oral communication and presentation skills essential for participation in seminars, and conferences. Students will work on projects in their own field, such as thesis, articles for publication, and dissertations.

ESL 204 Intermediate Lab for ESL (3 credit hours)
The lab course will provide the students with more individualized instruction and exercises, combining all the skills attained in intermediate classes. This lab course is Mandatory, and will include computer-based exercises.

ESL 301 Comprehensive ESL Reading & Writing (3 credit hours)
Students will work on academic writing, critical reading and augmentation, style and organizations of writing, summarizing, paraphrasing, and short essays. Student must submit a final report.

ESL 302 Comprehensive ESL Oral Communications (3 credit hours)
This course is designed to promote class participation as well as practice in formal and informal communication skills, including listening comprehension, pronunciation, conversional, and presentation skills

ESL 310 Academic and Professional Discussions (3 credit hours)
Oral Communication and presentation skills essential for participation in seminars, and conferences. Students will work on

projects in their own field, such as thesis, articles for publication, and dissertations.

ESL 311 Cross-Cultural Language Concepts (3 credit hours)
This course develops a students' awareness of various cultural dialects and focuses on the everyday speech patterns used in conversation. Students will explore the different ways in which other culture addresses each other.

ESL 312 Exploration of Current Events (3 credit hours)
This course is designed to explore the many areas of current events through media and publications. Students will learn the up-to-date trends in different cultural environments.

ESL 313 Global Communication Technology (3 credit hours)
This course will look at the effect of the international and global environment on organizational communication. Building on communication theories in the areas of computer mediated communication, group and distributed team communication, and inter-cultural/cross-cultural communication, the class will examine the barriers to communication, strategies and modifications needed to implement global communication strategies, and models of global communication for the 21st century

ESL 314 Business English Terminology (3 credit hours)
Designed for non-native English speaking students. Intended to equip English language learners with the English writing, speaking, and listening skills necessary to communicate effectively on the job while building learners' English vocabulary for the business discourse domain.

ESL 315 Information Technology for Non-Native Speakers of English (3 credit hours)
This introductory information technology content-based English language course will emphasize the development of English vocabulary, specifically computer terminology, and grammar while strengthening learners reading, writing, listening, and speaking skills.

ENGINEERING MANAGEMENT (SEM)

SEM 901 Introduction to Software Management (3 credit hours)
Through seminar discussions, collaborative practice, and individual investigation, you assess real software businesses from marketing, business strategy, financial, and overall business perspectives, applying fundamental methods, models, and frameworks. Throughout the course, students are also coached on effective business communication. Prerequisites: Graduate Standing.

SEM 902 Managing Software Professionals (3 credit hours)
This class will address a series of issues related to coordinating and managing the various tasks associated with a distributed software development project. In this context, you consider a variety of issues related to hiring, retention, and dismissal of employees, as well as cultural considerations of managing a diverse team. Prerequisites: Graduate Standing.

SEM 903 Software Product Strategy (3 credit hours)
> Your will learn to use market analysis techniques to evaluate opportunities for software products. You then use this information to explore technical feasibility, to expand the product definition, create a product roadmap, and presenting findings to senior management. Prerequisites: Graduate Standing.

SEM 904 Management of Outsourced Development (3 credit hours)
> Your project team analyzes the business rationale, risks, and benefits for outsourcing some or all of a new software project and presents its recommendations for outsourcing to senior managers. Your analysis includes which tasks should be outsourced, how to select suppliers, and how to manage the outsourced work effectively. Prerequisites: Graduate Standing.

SEM 905 Open Source Software (3 credit hours)
> You acquire fundamental skills and awareness of recent technical and business issues regarding open source software. Emphasis is on understanding the impact of open source software on the software industry including licensing and commercialization issues, corporate software evaluation techniques, and business models. Prerequisites: Graduate Standing.

SEM 906 Enterprise Architecture (3 credit hours)
> In this class you will learn the proposal and evaluation of architectural alternatives for software systems, including both packaged and open source applications. Your study includes integration mechanisms, inclusion of pre-built components, and adherence to standards to satisfy a given set of business, technical, and functional requirements. Prerequisites: Graduate Standing.

SEM 907 Software Product Marketing (3 credit hours)
> Your team develops a marketing plan for a new software product or service, identifying programs needed to support the cost-effective launch and ongoing marketing activities for the software. Teams define the product positioning and the product marketing initiatives, including pricing, channel management, service agreements, product collateral, sales, marketing communications, and partnerships. Prerequisites: Graduate Standing.

SOFTWARE ENGINEERING (SEN)

SEN 900 Software Engineering I (3 credit hours)
> The course is the same as CSN 800, and meets 3 hours per week for 16 weeks. Requirements specification techniques, software design technique and tools, implementation issues, and software engineering and programming languages. Prerequisite: CSN 882

SEN 908 Visual Basic Programming (3 credit hours)
> To learn how to use the visual basic programming environment and visual basic language to write applications with sophisticated Graphical User Interfaces (GUI) that run on an MS Windows platform. Prerequisite: CSN 922

SEN 909 Advance OO Programming with C++ (3 credit hours)
Syntax of C++, classes and objects, encapsulation, inheritance, polymorphism, design for reuse, and programming with objects. Prerequisite: CSN 381

SEN 910 GUI Programming Using Java (3 credit hours)
This course will provide the students with the graphical user interface (GUI) development using Java Swing. The majority of software today is written with a GUI. The GUI is how a software presents itself to the user and the outside world and through which the user interacts with the software. More and more effort in software development goes into the GUI since its quality can mean the success or the failure of the software. The student will acquire the essential knowledge and skill for user-friendly GUI development; maintaining responsiveness, stability; and complying with the most natural human expectations and reactions on a computer screen. Prerequisite: SEN 964

SEN960 OOP with Objective-C

All application development on the Mac and on the I-Phone is done in Objective C and its solid knowledge is a requirement for all development on these platforms. Even though Objective C is as old as C++ it is in the simplicity of its features and concepts more modern than C++ and offers features that neither C++ nor Java have. It is sufficiently different from either of these two to necessitate a course that teaches it. The vast majority of I-Phone developers out there today have only a rudimentary knowledge of Objective C and are therefore limited to only superficial application development. A useful preparatory curriculum for I-Phone application developers must include this course. This course adds to our traditional successful series of "OOP with . . ." courses that we continue to offer for the important Object Oriented languages.

SEN961 GUI Development with NS Library

The NextStep Library of GUI components is an elegant design of classes for GUI development, written in Objective-C. It is conceptually much clearer and easier to use than the Microsoft Visual C++ Library, although it does not reach the elegance and ease of use of Java Swing. Since it is the platform of choice for all GUI development on Mac and Iphone, its knowledge is a must. This class teaches the basic ideas of GUI development using NS, its approaches, its components, uses, event and exception handling mechanisms.

SEN965 I-Phone Application Development I

This is only a renaming of the existing course SEN965 I-Phone Application Development to distinguish it from the newly created successor course with the same name. It gives a comprehensive overview of the possibilities of I-Phone application development, the languages and tools used: the Xcode IDE, the Interface Builder, the IPhone simulator, and develops example applications for all areas: Graphics, Animation, Audio, Video, Web access etc.

SEN966 I-Phone Application Development II

The successor course for SEN965 I. It goes into depth from the standpoint of programming, allowing programmatical creation of existing GUI components without the often limiting use of the Interface Builder, allowing the design of new GUI components, and provides solid understanding of the event handling, threading and exception mechanisms. In short, it gives the designer mastery of the development tools, knowledge of the NS library, and thus the power to develop even the most complex and demanding Mac and I-Phone applications, for which only the developer's own imagination is the limit.

SEN957 GUI Development with Java

Teaches the principles of Graphical User Interfaces (GUI) and develops GUIs using Java's AWT and Swing libraries. Knowledge of and ability to use these libraries is of paramount importance in almost all of today's software development and is not limited to development of Android Phone applications. The learning and programming of GUIs is most effective and rewarding using these Java libraries, considered by many as the best, simplest and most elegant of all GUI development tools and libraries. (Most Java GUI developers don't use any visual development tools, since the design and concept of Java's GUI libraries itself is so natural and easy to understand, that visual development tools become redundant). Teaches the basic principles of graphical user interfaces, the widget hierarchies, event handling mechanisms, event queue management, thread handling etc. It is in most ways a parallel course to Sen961 except for the language and component libraries used.

SEN958 Android Phone Application Development

Teaches the use of SDKs released by Google to facilitate the development of applications for the Android Phone. Android Phones are Linux based and are programmed in Java. This alone bodes very well for any software development on that platform: The Linux OS, the most powerful and easiest to manage of all operating systems, and the Java programming language with its superior GUI development capabilities. Knowledge of SDKs is certainly an advantage when developing for the Android platform.

SEN 911 Web Graphic Design (3 credit hours)
>   The art and profession of selecting and arranging visual elements — such as typography, images, symbols, Audio, video and colors — to convey a message to an audience. Sometimes graphic design is called "visual communications." It is a collaborative discipline: writers produce words and photographers and illustrators create images that the web/Graphic designer incorporates into a complete visual message.

SEN 920 Computer Algorithms (3 credit hours)
>   Algorithm design, sorting algorithms, searching, graph algorithms, stacks, queues, and dictionaries implementations. Prerequisites: AMN 840, CSN 882 and SEN 909

SEN 929 Automata, Computability, and Complexity (3 credit hours)
This course introduces mathematical models of computation and the finite representation of infinite objects. It covers finite automata and regular languages, context-free languages, Turing machines, partial recursive functions, Church's Thesis, undesirability, reducibility and completeness, time complexity and NP-completeness, probabilistic computation, and interactive proof systems.

SEN 930 Software Testing & Quality Engineering (3 credit hours)
Modern testing techniques based on black box or behavior testing, control flow and data flow testing, transaction based and finite state testing, domain testing, reliability testing, software reliability models, tools and automation. Prerequisites: SEN 500, SEN 509 or SEN 564

SEN 932 Software Testing & Automation Via Perl & Shell Script (3 credit hours)
Learn traditional (UNIX) software tools, such as shell scripts, Tcl/Tk scripts, Perl, make, and possible .BAT (Win32) files. Use of these tools to develop regression tests, automate software releases, handle email and perform general computer automation. Prerequisites: CSN 864 or CSN 881, and SEN 956

SEN 934 Database Management Systems (3 credit hours)
Data definition and manipulation languages (related algebra and calculus). Architecture of database management systems. Transaction management. Concurrency control. Security, distribution, and query optimization. Prerequisite: CSN 878

SEN 936 Software Tools (3 credit hours)
Techniques for building tools and interfaces, and design for different applications. Prerequisite: SEN 500

SEN 939 Software Innovation and Creation (3 credit hours)
This course introduces innovation concepts, theory behind, methodologies, and practical applications. It also covers software patent strategies, the boundary between patentable and non-patentable software, and intellectual patent laws.

SEN 941 SE I, Basic Software Engineering Elements (3 credit hours)
This course focuses on techniques used throughout the software engineering process. The software life-cycle and modeling techniques for requirements specification and software design are emphasized. Both traditional and object oriented approaches are addressed. A group project gives students hands on experience developing a software requirements specification and a working prototype. This is a project-based class where students are expected to start from a narrative of the problem, and then specify output reports, analyze the problem using special data modeling techniques (entity-relationship, relational, object-oriented), design data structures, and then follow through with a prototype. This course represents 45 contact hours required for 3 semester units or credits.

SEN 942 SE II, Software Engineering Methodologies (3 credit hours)

This course introduces the framework that is used to structure, plan, and control the process of developing a software system. This course covers the methodologies of waterfall, spiral method, scrum, and extreme programming and their recognized strengths and weaknesses as well. These methodologies are often bound to organizations, tools, and projects.

SEN 951 SAP ABAP Programming (3 credit hours)
ABAP is the language for programming SAP's Web Application Server, part of its Net Weaver platform for building business applications. This course introduces the ABAP language environment, including the syntax checking, code generation and runtime system, and types of ABAP Programming.

SEN 952 SAP Tools (3 credit hours)
SAP Query is a powerful tool to get reports without any programming knowledge. In this course you will learn to create and design your own SAP Query reports. This course covers two SAP Query scenarios: (1) creating a simple SAP Query report when all information is available in a single table, and (2) creating an advanced join table SAP query when the information required is spread in different tables.

SEN 953 Programming Language Concepts (3 credit hours)
This course will cover a survey and critical comparison of a variety of computer languages. Issues include syntax, semantics, control structures, and data representation. There will be a discussion of both design and implementation of both imperative and declarative languages. This course represents 45 contact hours of instruction required for 3 semester units or credits.

SEN 956 The Unix Operating System (3 credit hours)
Using Unix, fundamental Unix commands, pipes and redirection, shells, processes, Unix system administration basics, internals of Unix, history of operating systems. Prerequisite: CSN 882

SEN 959 Operating System (3 credit hours)
This course will cover the basic principles of operating system design and implementation. Concurrent processes, inter-process communication, job and process scheduling; deadlock. Issues in memory management (virtual memory, segmentation, and paging) and auxiliary storage management (file systems, directory structuring, and protection mechanisms).

SEN 960 Complier Design (3 credit hours)
Parsing: comparison of LL versus LR. Use of a lexer and parser generator. Formation of syntax trees. Name management via a symbol table. Type resolution. Code generation issues. Simple optimizations, such as peephole optimizations, strength reduction, and constant folding. Prerequisites: SEN 920 and SEN 964

SEN 962 Web Page Design Using HTML and Java (3 credit hours)
This course introduces JavaScript, which can make HTML more powerful and dynamic. The topics covered are as follows: Create dynamic images, frames, dynamically update pages, JavaScript and cookies, plug-ins, cascading style sheets, and debugging. After

finishing this course, the student will have a better picture of client side vs. server side, HTML vs. JavaScript and integrate JavaScript into web pages to create dynamic images, add smart forms, and detect which browsers and plug-ins that visitors are using so that one can customize the content. Prerequisite: CSN 364 or CSN 381

SEN 963 Unix, Perl and Web Management (3 credit hours)

Learn how to use UNIX commands and your ITU Linux account effectively. Understand UNIX basic: files, pipes, jobs, redirection, globing. Basic Perl and Java Script. Learn how to design, write, and maintain a small website. Learn how to write interactive web pages using either Perl CGI scripts or JavaScript. Learn how to run a Web server on UNIX. Prerequisite: SEN 556

SEN 964 Advance OO Design Using Java (3 credit hours)

This course is the same as CSN 464, meeting three hours per week. Introduction to Java, Application versus Applenet, Installing Java, variables, types, expressions, control constructs, java. Lang, Strings, Vectors, Hash tables, File I/O, The Java AWT, components, events, layout managers, Improved GUI libraries, Threads, Synchronization, Java intervals, Sockets, Writing a server and a client. Prerequisites: CSN 881 and CSN 881

SEN 965 Security Programming (3 credit hours)

This Secure Programming course gives students a good working knowledge of common programming problems and how to avoid them in their code. Students also gain the ability to review existing programming for vulnerabilities and how to rectify them. This course will help students get started on the right foot with Windows security APIs, Java Security, and give the students the foundation of knowledge needed to understand even the most obscure security concepts. It will also introduce the students to techniques for adding security-based features to various applications. Through carefully designed code and interfaces, students will be able to extract security information from objects easily and protect objects with a minimum of code. This is a programming and code-oriented class with lots of hands-on projects and exercises. Prerequisite: SEN909 or SEN964

SEN 969 Computational Models of Discourse (3 credit hours)

This course is an introduction of automatic discourse processing. It covers methods and models that apply to image and speech processing. The detail methods include discourse structure, models of coherence and cohesion, recognition algorithms, and image segmentation as well as machine learning methods for discourse analysis.

SEN 971 Storage Area Network (SAN) Implementation (3 credit hours)

In this comprehensive and practical course, the instructor will take you through all aspects of storage networking. First, the theory of how a SAN can help consolidate conventional server storage onto networks will be explained. Then students will understand how a SAN can help make applications highly available no matter how much data is being stored, which, in turn, makes data access and management faster and easier. Along the way, the course will provide students with practical advice on the design and implementation of this new technology and how it works to make the decision to adopt storage networking easier. Students will understand the theory of SAN

technology, and appreciate the benefits of SAN. This course provides a detailed up-to-date coverage on the following topics: The evolution of computing in data centers leading to SANs, some killer applications for SAN technology, storage networking theory and its meaning to an enterprise information processing architecture, the software components required to implement SANs, and some practical issues in SAN implementation and management.
Prerequisite: CEN 963

SEN 974 Client/Server and The Internet (3 credit hours)

This course covers the Client/Server paradigm in the context of the Internet: this includes CORBA architecture, Java programming language and its support to applications and applets. The core of this course is focused on Java extended APIs and their usage including: Sockets, Remote Method Invocations (RMI), Java IDL, Java Security APIs and Java Database Connectivity (JDBC). Prerequisite: SEN 509

SEN 976 Theory of Parallel Systems (3 credit hours)

This course introduces theoretical foundations of general-purpose parallel computing systems including languages, architecture and algorithms. It also covers multithreading, synchronization, race detection, load balancing, memory consistency, routing networks, and message-routing algorithms.

SEN 978 Knowledge-Based Applications Systems (3 credit hours)

This course covers knowledge representation, knowledge acquisition and application development which   includes the knowledge base and the inference mechanisms. This course also covers some basic techniques of Artificial Intelligence. The course also provides hands-on experience in building a knowledge-based application.

SEN 979 Cryptography and Cryptanalysis (3 credit hours)

This course introduces the modern cryptography including the fundamental cryptographic primitives of public-key encryption, digital signatures, pseudo-random number generation, and basic protocols and their computational complexity requirements. It also introduces the study of methods for obtaining the meaning of encrypted information.

SEN 980 Database Systems (3 credit hours)

E-R and E-C-R model, view integration, relational database, network database, hierarchical database, and physical database design.
Prerequisite: An undergraduate course in Data Structure or CSN 882

SEN 981 Pervasive Human Centric Applications (3 credit hours)

This course introduces applications for personal device assistants such as mobile phone, GPS, or iTouch. These applications include speech processing, vision, GPS, and more. The applications will run on handheld devices such as iTouch, cell phones such as iPhone or gPhone.

SEN 982 Oracle Database Architecture and Administration I (3 credit hours)

The course is the same as CSN 482, meeting three hours per week. It is composed of two parts: Oracle Architecture and Administration. The first part gives a comprehensive picture of Oracle architecture and discusses the concept of Oracle database and instance. The second

part shows students how to create Oracle database, allocating system storage and planning for future storage requirements, creating and modifying database storage structure and objects, and controlling and monitoring user access to the database. Prerequisite: SEN 980

SEN 983 Oracle Database Architecture and Administration II (3 credit hours)

This is a continuation of SEN 982. It covers the availability and scalability issues, Oracle database architecture, backup/recovery concept, Oracle backup/recovery configuration, types of failures, and the usage of high availability features in Internet applications. Prerequisite: SEN 582

SEN 984 UNIX Networking Programming (3 credit hours)

The course will cover in detail the different interprocess communication (IPC) facilities available under the UNIX operating system to develop distributed applications in a network environment. Distributed application components can be executed on the same machine, or on different machines, or a combination. These IPC facilities have two main attributes, the IPC interface and the network protocol. The course covers in detail the following interfaces: pipes, FIFO, shared memory, message queues, semaphores, sockets, system V Transport Layer Interface (TLI), and Remote Procedure Calls (RPC). In addition, we cover a useful set of network routines that simplifies distributed programming. Prerequisites: CSN 881, CSN 882 and SEN 956

SEN 985 Artificial Intelligence (3 credit hours)

This course introduces the foundation of simulating (or creating) intelligence from a computational point of view. It covers the techniques of reduction, reasoning, problem solving, knowledge representation, and machine learning. In addition, it covers applications of decision trees, neural nets, SVMs and other learning paradigms.

SEN 986 Software Design Using Unified Modeling Language (UML) (3 credit hours)

This course is an introduction to object-oriented principles of software design using the Unified Modeling Language (UML). Object oriented systems offer the promise of constructing highly modular and reusable software components. In this course we will discuss what is meant by object oriented design from analysis, through system design to programming implementation. The course will focus on building the object-oriented (OO) analysis model for software engineering. Then it defines in depth principles of object orientation reviewing the characteristics that actually comprise a true object. The course covers the gathering of requirements for software design, software project organization & management, the role of design, use-case analysis, object modeling in software engineering and an introduction to design patterns. UML is presented in context throughout the discussion with emphasis on the practical application of OO principles and techniques, including the use of UML to solve real-world problems. Students are expected to write a detailed description of the design for each of the programs, incorporating UML models where appropriate. Students will implement their programs in the Java programming language. Prerequisites: CSN 874, CSN 882. Students should be familiar with

Java, C++ or other language, some web programming as well as basic data structure concepts and some UNIX.

SEN 987 Program Analysis (3 credit hours)

This course introduces a variety of program analysis techniques and tools for software engineering applications. These techniques and tools are for static and dynamic analysis. Static analysis covers dataflow, type systems, model checking, decision procedures and theorem proving. Dynamic analysis covers testing, debugging for fault isolation, and model inference. This course also covers the tools to visualize the result of the program analysis.

SEN 989 Natural Language Processing (3 credit hours)

This course introduces the theory and practice of human natural language processing, with an emphasis on linguistic and cognitive from an engineering perspective. It covers syntactic and semantic processing and machine learning. Besides it also introduces applications of these methods and models in syntactic parsing, information extraction, and machine translation.

SEN 990 Introduction to Compiler Design I (3 credit hours)

Parsing: comparison of LL versus LR. Use of a lexes and parser generator. Formation of syntax trees. Name management via a symbol table. Type resolution. Code generation issues. Simple optimizations, such as peephole optimizations, strength reduction, and constant folding.   Prerequisites: SEN 920 and SEN 964

SEN 991 Computer Graphics I (3 credit hours)

Computer Graphics I is a study of the hardware and software principles of interactive raster graphics. Topics include an introduction to the basic concepts, 2-D and 3-D modeling and transformations, viewing transformations, projections, rendering techniques, graphical software packages and graphics systems. Students will use computer graphics packages and implement fundamental computer graphics algorithms. This course represents 45 contact hours required for 3 semester units or credits.

SEN 992 Computer Graphics II (3 credit hours)

Historical development of computer graphics, black and white graphics programming, color raster graphics, resolution and memory requirements, look-up tables, vector graphics and matrices, surfaces, rotation & scaling, graphics primitive, and transformation. Prerequisite: AMN 840

SEN 994 X Window System Programming (3 credit hours)

Covering the spectrum of writing X window applications from the Xlib level up to Intrinsic, widget sets (Athena, Motif) and widget creation. Window managers, inter Xclient communication, resource specification. Prerequisites: CSN 881 and SEN 956

SEN 996 1 Independent Study (3 credit hours)

By arrangement with instructor. Independent study of topics of special interest in software engineering under the direction of an instructor, who is knowledgeable in the field. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: Graduate standing

SEN 998 M.S. Project (3 or 6 credit hours)

By arrangement with project advisor. A nominal number of 3 or 6 credit hours is expected toward the M.S. degree if the Project Option is selected. Conduct independent research of an approved topic in software engineering, prepare a technical report, and defend it before a faculty advisor. Prerequisite: Graduate standing

SEN 999 M.S. Thesis (6 credit hours)

By arrangement with thesis advisor. A nominal number of 6 credit hours is expected toward the M.S. degree if the Thesis Option is selected. Conduct independent research of an approved topic in software engineering, prepare a thesis, and defend it before a committee composed of a number of faculty designated by department chair. Prerequisite: Graduate standing

BUSINESS ADMINISTRATION

ACTN 900 Financial Accounting (3)

This course provides an introduction to basic theory and methods of financial accounting. It is designed to offer managerial users the foundations of accounting concepts. The course helps the students understand the financial statement information. Focus will be on accounting for assets (e.g., Accounts Receivable, Inventories, Property, Plant and Equipment, Intangible Assets), liabilities (e.g., Bonds, Deferred Taxes) and owners' equity. Focus will be also on the presentation of the income statement through Net Income, revenues and expenses. Class sessions develop the understanding of the different steps of the accounting cycle, and of the financial statements that give the managers the ability to use them for decision making. Prerequisite: Graduate standing

ACTN 910 Managerial Accounting (3)

The course develops the understanding of the many ways that firms utilize costs. The students will learn the alternative costing methods, such as the relevant costs for decision making; the break even analysis and the contribution margin approach; absorption costing vs. direct costing; cost volume profit analysis. In addition, other topics are discussed such as the decision making involving joint costs, decentralization, product costing, job and process costing, and performance evaluation. Prerequisite: ACTN 900 or equivalent

ACTN 920 Cost Accounting (3)

This is a study of cost accounting principles and procedures. The focus is on capital budgeting, standard costing, flexible budgeting, cost allocation, variance analysis, and transfer pricing. Prerequisite: ACTN 910 or equivalent

ACTN 921 Intermediate Accounting (3)

This course is a review of basic accounting concepts. Topics include current assets, non current assets and liabilities, including pensions and other employee compensation issues, leases, and debt financing. The course develops in depth understanding of equity accounts. It also discusses the single step and multiple step income statements, and the comprehensive income, derivatives, and contingencies. In addition, the income statement with separated reported items, such as discontinued operations, extraordinary items, and the cumulative effect

of a change in accounting principle (net of tax effect) are presented. Prerequisite: ACTN 900 or equivalent

ACTN 923 Advanced Accounting (3)

This course develops an understanding of the financial accounting principles with the preparation of consolidated financial statements, segment disclosures, foreign currency adjustments, in addition to reorganizations and liquidations, mergers and acquisitions. Prerequisite: ACTN 922 or equivalent

ACTN 924 Auditing (3)

This course covers generally accepted auditing standards (GAAS) as they apply to the study of audit preparation. Other auditing services, such as compilations and reviews, are examined. In addition, the course covers the Code of Professional Conduct, which demonstrates the ethical responsibilities of the profession. Prerequisites: ACTN 900 or equivalent

ACTN 925 Accounting Information Systems (3)

The course addresses the development and use of accounting information systems for managerial control and external reporting, focusing on reporting objectives, management needs, documentation, security, and internal controls. The course focuses on concepts and principles of designing computer systems to perform accounting functions; and extensive use of applications of different microcomputer accounting software packages. Prerequisites: ACTN 900 or equivalent

ACTN 926 International Accounting (3)

The knowledge of accounting requirements and the influence of environmental factors on the accounting systems both nationally and internationally becomes important to the accounting professional. Topics of financial accounting for international operations, multinational managerial accounting and control, comparative international accounting, international reporting issues, and international taxation are examined. The focus of the course is to solve the problems related to accounting for multinational corporations doing business in a global environment. This course covers the topics of currency translation and foreign currency gains and losses, and accounting for international accounting organizations. Prerequisite: ACTN 910 or equivalent

ACTN 927 Tax Accounting Principles (3)

This course is an introduction to federal tax law, including the preparation of individual income tax form 1040 and related schedules. Tax accounting principles, such as the measurement of income, asset exchanges, capital transactions, and business expenses are examined. Topics include corporate income tax, subchapter S, dividends, and liquidating distributions. The course also provides tax knowledge through identification of significant differences between tax and financial accounting. Prerequisite: ACTN 900 or equivalent

ACTN 928A Payroll Accounting (2)

The course examines the payroll records, regulations, and laws related to payroll accounting. It provides the students skills on the preparation of all payroll forms, schedules, and records. The course will also include a study of the computation of earnings and withholdings. Students will learn how to compute wages and salaries, withholding for

social security and income taxes.   Prerequisite: ACTN 900 or equivalent

ACTN 928B Microcomputer Accounting (1)

This course teaches the use of microcomputers for accounting information such as computing wages; calculating social security, income, and unemployment taxes. Emphasis is placed on preparing appropriate payroll tax forms; and journalizing and posting payroll transactions.   Prerequisite: 928B should be taken concurrently with 928A

ACTN 929 Federal Personal Income Taxation (3)

The course is an introduction to the federal income taxation of individuals. Topics include the concept of income, exclusions from income, personal and business deductions, taxable income. Prerequisite: ACTN 900 or equivalent

ACTN 930 Federal Corporate Taxation (3)

The course is an introduction to the federal income taxation of corporation. Topics include the concept of contribution, formation, stock dividends, liquidation, and acquisition. Prerequisite: ACTN 900 or equivalent

ACTN 940 Federal Partnership Taxation (3)

The course is an introduction to the federal income taxation of partnership. Topics include the concept of formation, operation of a partnership, sales of partnership interest, termination, and death of a partner. Prerequisite: ACTN 900 or equivalent

ACTN 991 CPA Exam: Auditing and Attestation (3)

This course develops an understanding of the auditing process and the role of internal and external auditing in an organization. The course covers auditing procedures, auditing standards generally accepted (GAAS) and other standards related to attestation engagements. The auditing and attestation section of the CPA exam tests knowledge in the context of five broad engagement tasks: plan the engagement, evaluate the prospective client and engagement, decide whether to accept or continue the client and the engagement, and enter into an agreement with the client; consider internal control in both manual and computerized environments; obtain and document information to form a basis for conclusions; review the engagement to provide reasonable assurance that objectives are achieved and evaluate information obtained to reach and to document engagement conclusions; and prepare communications to satisfy engagement objectives.

ACTN 992 CPA Exam: Business Environment and Concepts (3)

The Business Environment and Concepts section tests knowledge of general business environment and business concepts that candidates need to know in order to understand the accounting implications of transactions. Topics in this section include knowledge of business structure; limited liability companies (LLC), limited liability partnerships (LLP), and joint ventures; economic concepts essential to obtaining an understanding of an entity's business and industry; financial management; information technology; and planning and measurement.

ACTN 993 CPA Exam: Financial Accounting and Reporting (3)

The Financial Accounting and Reporting section tests knowledge of accounting principles generally accepted (GAAP) for business enterprises. Topics in this section include financial statements concepts and standards; typical items: recognition, measurement, valuation, and presentation in financial statements in conformity with GAAP; specific types of transactions and events: recognition, measurement, valuation, and presentation in financial statements in conformity with GAAP; accounting and reporting for governmental entities; accounting and reporting for not-for-profit organizations.

ACTN 994 CPA Exam: Regulation (3)

The Regulation section tests candidates' knowledge of federal tax procedures and accounting issues; of federal taxation of property transactions; of federal taxation—individuals and entities; of professional and legal responsibilities, of ethics and of business law.

BUS 400 Fundamentals of Financial Accounting (3)

The course covers accounting concepts and terms used to prepare business financial statements: Balance Sheet, Income Statement, and Statement of Cash Flows.

BUS 410 Fundamentals of Managerial Accounting (3)

The course is an overview of the use of financial accounting information for internal planning and control purposes. It is an introduction to manage strategic and operational choices, to determine pricing and profitability, and to control costs. Topics include cost accounting, budgeting, performance evaluation, and resource allocation.

BUS 411 Managerial Applications of Information Technology (3)

This course introduces applications of corporate information systems. Topics describe the utilization of the software to solve a wide range of specific business problems and develop strategic decisions, and business management solutions.

BUS 412 Managerial Economics (3)

The course focuses on the application of economic concepts and principles to managerial decision-making. Topics include a review of economic models, the demand and supply analysis, optimization techniques, market structure, and risk evaluation. This course emphasizes the application of microeconomic tools to managerial problems.

BUS 413 Political, Social, and Legal environment of Business (3)

The course examines the roles and responsibilities of business, key legal concepts, and ethical decision-making processes. In addition, the course presents a critical analysis of theory and regulation of business from political, social and legal perspectives.

BUS 414 Financial Management (3)

This course introduces basics principles in finance, with a focus on using the financial statements and other financial data to make decisions. Topics include cash flow, the time value of money, capital budgeting, financial risk, working capital management, cost of capital, stock and bond valuation, and the financial regulatory environment.

BUS 415 Operations Management Analysis (3)

The course introduces the design and management of manufacturing and service operations. Students will learn to improve quality and productivity of products, services, and work-performing processes. Topics include product and service design, capacity planning, supply chain management, theory of constraints, total quality concepts and tools, and just-in-time management and lean operations.

BUS 416 Fundamentals of Marketing Management (3)

The course provides an overview of the relationships in marketing, business and behavioral activities. Topics include consumer behavior and segmentation, marketing research, environmental factors, competitive positioning, marketing information systems, distribution, pricing, promotional considerations, and ethical issues.

BUS 417 Management Principles and Organizational Behavior (3)

This course introduces the principles of management and their application in public and private organization. It helps the students to learn frameworks for resolving problems in organizational settings. Topics include employee motivation, group behavior, leadership, strategic planning, organizational design and problems and interpersonal communication and influence.

CONS 900   Consilience Theory 1 (3)

This is the first course comprising the capstone of ITU's general education requirements. It is aimed at presenting the case for the unity of science. It brings together leading edge scientific findings and thinking across a broad spectrum of human knowledge and explores new efforts at integrating the natural with the social sciences. It explores the relationships and linkages among physics, biology, neuroscience, psychology, psychodynamics, mysticism, and philosophy. Prerequisite: None. Required of all undergraduates

EBUS 910 Executive Leadership (3)

This course will improve the students interpersonal and team working skills. It will help the students to understand organizational behavior issues, with a special emphasis on assessing leadership competencies and changing corporate cultures. Topics include analyses of leading companies, and direct application of material to individual work settings. Prerequisite: Graduate standing

EBUS 911 Leading and Managing Change (3)

This course offers practical tools to improve the students' ability to influence, to negotiate and to lead changes in the organization. Prerequisite: Graduate standing.

EBUS 912 Marketing Strategy (3)

This course focuses on the development and implementation of marketing strategies in the rapidly changing global environment. This course prepares future general managers to deal with core marketing issues by providing a way of thinking strategically about the firm's products, services and markets. Prerequisite: Graduate standing

EBUS 913 Strategic Management (3)

This course examines the complex strategic problems facing top management in a variety of contemporary organizations. Topics

include strategy formulation, implementation, and evaluation. The course develops the students' ability to analyze and manage business problems from managerial perspectives. It provides concepts to guide strategic decision-making through examining case studies of diverse managerial situations in both large and small organizations. Prerequisite: Graduate standing

EBUS 914 Competing in the Global Environment (3)

The course seeks to provide the students with the skills, and the knowledge required to successfully manage organizations and organizational units within a multinational environment. The primary objective of this course is to help the students think like managers in the global context and enable them to develop an understanding of the strategic issues. Prerequisite: Graduate standing

EBUS 915 Data Analysis and Decision Models (3)

This course helps the students to formulate, solve and interpret the mathematical models that assist a manager in decision-making. Decision models that are used in different businesses and industries are emphasized. The course helps the students to make effective operational and strategic decisions using concepts, methods, and quantitative tools. Prerequisite: Graduate standing

EBUS 916 Developing Strategies for Competitive Advantage (3)

This course seeks to expand the students' perspective of competitive strategy and to encourage development and understanding of how firms create and reinforce a competitive advantage. The objective of the course is to provide the students with the conceptual tools associated with the understanding of industry, the assessment of core competencies and the evaluation of key competitors in the formulation and implementation of business strategies. Prerequisite: Graduate standing

ECON 920 Macroeconomic Theory (3)

This course analyzes the level and rate of growth of output income, employment and prices, interest, and foreign exchange rates. It prepares decision-makers to understand how an economy functions, how to interpret, analyze, and operate within a changing macroeconomic environment. Prerequisite: Graduate standing

ECON 921 Microeconomics for Business Decisions (3)

The course provides an analysis of managerial economics. It focuses on demand, cost, production, and pricing at the individual firm or industry's level. The market structure and the regulatory environment are examined. Prerequisite: Graduate standing

ECON 923 International Economics (3)

This course analyzes the source of a country's comparative and competitive advantage in international trade. The course emphasizes the relationship among industrial performance, and trade policy. Prerequisite: Graduate standing

FINN 916 Securities Analysis (3)

The course develops analytical skills for personal or business investment activities. Topics covered are techniques for analyzing risk and return for investment opportunities. This course discusses the modern and traditional portfolio management techniques. The

students will learn the tools and techniques to develop their skills through the analysis of real firms. Prerequisite: Graduate standing

FINN 920 Financial Derivatives and Risk Management (3)

This course helps the students to develop the necessary skills to value and to use options, and futures. Topics include the valuation of futures contracts on stock indices, on commodities and treasury instruments; the valuation of options; forwards; swaps; hedging strategies. The course covers derivative exchange, valuation of derivatives, trading practices and regulations, assessing and managing financial risk, and mutual funds analysis. Prerequisite: Graduate standing

FINN 930 Investment Management (3)

The course offers the basics of investment management. Quoted and private equity investments and entrepreneurial finance are the focus of the topics. This course introduces market and portfolio perspectives, starting with the discounted cash flow methods to the concept of term structure in the valuation of risk-free cash flows, including forward rates and valuing risky or uncertain cash flows. The course prepares students to identify various investment products. Both real world and theoretical views are discussed. Prerequisite: Graduate standing.

FINN 931 International Financial Management (3)

This course provides students with the framework for making corporate financial decisions in an international environment. Topic include: measurement of currency exposure and of currency risk. In addition, topics about the decision to undertake a global financing program, exchange and capital market; capital budgeting analysis for foreign direct investment; and the value of target firms for cross-border acquisitions are discussed. The course will examine different aspects of the foreign exchange market, the role of governments and the central banks. The main focus is on the markets for spot exchange, currency forwards, options, swaps, international bonds, and international equities. Multinational financial transactions create unique challenges due to the market complexity, to the exchange rate and the political risks. Prerequisite: Graduate standing

FINN 932 Corporate Finance (3)

Corporate Finance is an introductory finance course and it is required for all MBA students. It is designed to cover the areas of finance that are important to all managers. At the end of this course you will be able to value the financial position of a firm. In order to reach this goal, the students will analyze historical uses of funds and understand project funding needs. In addition, the students will be able to analyze working capital management; choose among alternative sources of external funding for company operations; and evaluate investment opportunities. The course shows the students how to use ratio analysis to assess corporate performance, financial statements and cash needs. Prerequisite: Graduate standing

FINN 933 Managerial Finance (3)

The course teaches the students financial concepts and tools necessary for effective business planning. Topics include formation of interest rates, income taxes, working capital management, cost of capital, financial forecasting, external sources of capital, company valuation and bankruptcy. Prerequisite: Graduate standing

FINN 934 Financial analysis and Corporate Policy (3)
The course is an in-depth study of selected topics in finance, including ratio analyses, capital structure and leverage, working capital management, reorganization and bankruptcy. Current business cases, including several Harvard Business School cases study, will be discussed. Prerequisite: Graduate standing

FINN 935 Mergers and Acquisitions (3)
This course examines issues that arise in the merger and acquisition context. There will be an analysis of the key components of acquisition agreements against the background of relevant case law. Topics include advanced capital budgeting techniques, strategies, acquisitions, and leveraged buyouts. The course focuses on the study of the law governing, and the methods of accomplishing, including the conduct of negotiations, considerations in pricing and stock-for-stock swaps. Prerequisite: Graduate standing

FINN 936 Hedge Funds (3)
This course focuses on the private investment entities commonly referred to as hedge funds. It will address the legal and economic issues associated with different forms of private investment entities, such as traditional hedge funds and private equity funds, and review the federal and state regulatory framework governing hedge funds. The course will also explain the operation of a hedge fund, including a review of the legal and business issues. Prerequisite: Graduate standing

GRN 511 Verbal Communications and Conversations (3)
This course focuses on the development of verbal language skills. It includes conversations in small groups. Topics are relevant to the needs and experiences of students learning to use verbal English in the American culture. Prerequisite: None

GRN 513 Newspaper Reading and Essay Writing (3)
This course increases student's proficiency in the use of the newspaper. Emphasis is given to articles and sections useful in becoming acclimated to the procedures and systems of a new culture. It includes writing practice on topics relevant to engineering. Prerequisite: None

GRN 514 Active Listening (3)
The course focuses on the development of listening as a method for learning English. Format will include listening to cassette tapes. Students will respond by paraphrasing, developing questions and replying. Prerequisite: None

GRN 515 Technical Writing and Public Speaking (3)
This course is an introduction to formal technical reports and oral communication designed especially for students planning careers in the sciences or engineering. By asking students to research and present topics to the class, the course provides the student with a thorough grounding in the writing and speaking skills required in the workplace. A particular emphasis is placed on effective professional communications to allow students to begin and excel in their careers. Prerequisite: None

GRN 597 Joint Seminar / Curricular Practical Training (CPT) (3)

Invited seminar speakers on subjects of general interest. Prerequisite: None

Curricular practical training
The curricular practical training is defined to be alternative work and study, internship, cooperative education, or any other type of internship or practicum that is offered by sponsoring employers. Prerequisite: None

GRN 599 Writing and Composition (3)
This course provides students with a thorough grounding in writing and composing in English with particular emphasis on effective professional communications at management, marketing, administrative, and research levels. The student gains knowledge and experience in choosing and composing various types of real-world business correspondence. Although the class will be focused on composition, students will be expected to participate in spoken as well as written forms of communication. Prerequisite: None

GRN 920 Internship (3)
Conduct research and development at a sponsoring company on a project in the student's field for one semester. Students must spend at least 80 contact hours for each credit hour received. At the end of the internship, the student must submit a satisfactory technical report to the advisor, and receives three credit hours. This course does not count toward core degree requirements, unless specifically granted on an individual case-by-case basis by the Academic Committee. Prerequisite: None

HRMG 940 Human Resource Management (3)
This course examines the principles of human resource management, including recruiting, hiring, orienting, training, developing, disciplining, and rewarding employees. The course provides a management-oriented exploration of human resource management, structure, functional applications, and labor management relations. This course is a humanistic and legal analysis of organizations, focusing on the role of human resource management. There will be an examination of managers and leaders within organizations and their responsibility to maximize performance and make decisions based on ethical criteria. Prerequisite: Graduate standing

HRMG 941 Employee Training and Development (3)
This course reviews training, employee and organizational development techniques that the organizations use to build group and individual skills. Topics include linking identified needs to business objectives, developing an implementation plan, implementing the plan using a variety of modalities, and assessing results. The students will use a hands-on approach to evaluate organizational needs for employee development. Prerequisite: Graduate standing

HRMG 942 Employment law for business (3)
This course emphasizes federal employment statutes. Cases are used to illustrate the various federal courts' interpretation. Federal agencies such as Equal Employment Commission and Department of Labor are studied. Topic on the employment Law provides a comprehensive analysis of federal and state laws, which affect the human resource function, including equal employment opportunity, wage and overtime

payment, and employment agreements. The course focuses on applying employment laws to develop programs that enable organizations to act positively in meeting both company and work force needs, trying to resolve workplace disputes, prevent litigation, and implement personnel policies and practices in conformity with applicable law. Prerequisite: Graduate standing

HRMG 943 Human Resource Planning (3)

This course helps the students to understand the necessary basics of the human resources planning process in organizations. In this course, the students should complete a comprehensive written plan for a company's human resource function. Review of concepts and skills developed in other human resource courses is required. In addition to preparing the written plan, the students should make an oral presentation to the class and, if possible, to a panel of human resource professionals. Quantitative, qualitative concepts, approaches and techniques are discussed. Topics include human resources data systems and human resource action plans. Prerequisite: Graduate standing

HRMG 944 Managing Human Capital (3)

This course focuses on the organizational factors that influence the utilization of human capital. In addition, it will focus on developing, maintaining and improving workforce competence. This course will also explore the challenges of increasing the competitive advantage through effective human capital management. Topics include workforce planning in a dynamic environment; building a positive human capital reputation; dynamics of organizational culture; organizational change and learning; linking corporate strategy and human capital management, and influencing emerging technologies. Prerequisite: Graduate standing

HRMG 945 Designing, Implementing, and Evaluating Training Programs (3)

This course provides the tools and techniques for good planning, organizing, and evaluating a training program. Topics include evaluating training needs, setting performance standards, and evaluating measures for improvement. Prerequisite: Graduate standing.

HRMG 946 Human Resources and Technology (3)

This course offers the students the best practices in use of technology in the human resources field. Topics include the use of human resources information systems, web-based human resources used to develop and support the various functional areas of human resources. Prerequisite: Graduate standing

HRMG 947 Human Resources Management: Analysis and Problems (3)

The course is a study of the role of human resource management in the strategic planning and operation of organizations. This course offers the analysis of the influence of federal regulations (including equal opportunity, discrimination, etc.). The human resource problems are supported by a review of research findings, discussions, case studies, and applicable federal regulations. Prerequisite: Graduate standing

HRMG 948 Managing Global Diversity (3)

This course discusses the benefits and challenges of managing diversity in the workplace. The students will analyze various ways to develop a positive, nondiscriminatory and productive work environment. In addition, the course focuses on workplace issues related to differences in gender, race, cultural ethnicity, age, and social class. Prerequisite: Graduate standing

INBS 910 Fundamentals of International Business (3)
This course discusses the world of international business, which raises issues related to controlling and staffing enterprises that are located in a distant area from a business' primary location. Topics include economic, cultural, legal, and political environments of international trade, international institutions and agencies. In addition, the topics include problems of foreign investments, conflicts between host countries and multinational corporations, and effects of multinational corporations on the global economy. Prerequisite: Graduate standing

INBS 911 International Financial Markets (3)
This course analyses the international financial markets. Topics include foreign currency, international money markets, banking, and capital markets. Prerequisite: Graduate standing

INBS 912 International Law (3)
This course explores the legal considerations that apply to U.S. businesses abroad and explores issues of contract negotiations, international conventions, and current multinational business issues such as dumping, products liability, patents and copyrights. Topics about sovereignty, legitimate war, humanitarian intervention, economic aid, and human rights are discussed. The course explores international law concepts and issues such as, the law of treaties. It will discuss a series of international law topics and issues, including the settlement of international disputes, and the law or armed conflict. Prerequisite: Graduate standing

INBS 913 Global Strategic Management (3)
This course examines the fact of Globalization, and how managers in multinational firms struggle with a complex and rapidly changing international economic environment. The course introduces the business skills of understanding and managing strategic issues in international environment. It will also focus the understanding of the need for awareness of a change in organizations' internal and external environments. Prerequisite: Graduate standing

INBS 914 International Monetary Economics (3)
The course offers an analysis of the balance of payments and foreign currency markets. Topics include the international payments system, foreign investment and debt. Prerequisite: Graduate standing

INBS 915 International Human Resource Management (3)
The course focuses on the role of the manager in international organizations. It creates awareness of differing legal environments. Topics related to functional areas of human resource management - staffing, compensation, training, and labor relations are discussed. Prerequisite: Graduate standing

INBS 920 Strategic Management in a Global Environment (3)

This course helps the students to understand the environmental assessment skills, and to study the global issues to improve their ability to think strategically and develop sustainable competitive advantages. Prerequisite: Graduate standing

INBS 921 International Business Practicum (3)
This course is a capstone course that focuses on integrating theory and practice through the application of international business tools and methods. The course will feature guest speakers that are experts in various aspects of international trade. Prerequisite: Graduate standing

MBAN 996 Case and Independent Study (3)
By arrangement with instructor. Independent study of topics of special interest in business administration under the direction of an instructor, who is knowledgeable in the field. It may consist of reading, homework, tests, presentation and project determined by the instructor. Prerequisite: Graduate standing

MBAN 997 Research Methods (3)
This course provides an introduction to some of the important topics in the general area of research methods, and to do so in a non-intimidating and informative way. Topics include the role and importance of research, problem selection, sampling, measurement, data collection, descriptive and inferential statistics, experimental and non-experimental research, quasi-experimental research, and writing and presenting research. The course of study will give the student a solid background of knowledge for developing a research paper and subsequently, submitting it for publication to a refereed journal. Prerequisite: Graduate standing

MBAN 998 MBA Project (3)
By arrangement with project advisor. A nominal number of 2 or 4 credit hours is expected toward to M.S. degree if the Project Option is selected. Conduct independent research of an approved topic in business administration, prepare a technical report, and defend it before a faculty advisor. Prerequisite: Graduate standing

MBAN 999 MBA Thesis (3)
Preparation of an independent research or thesis and defending it before a committee composed of a number of faculty designated by director of the M.B.A. program. Prerequisite: Graduate standing

MGTN 901 Fundamentals of Management (3)
This course focuses on both theory and application. It is a broad overview of the field of professional management designed for the beginning upper division or graduate student or interested non-management major. It covers the functions of a manager, managerial ethics and social responsibility, managing in a global environment, motivation, controlling, leadership, organization design, strategy, and operations. Prerequisite: Graduate standing

MGTN 922 Quality Control Management (3)
This course focuses on the understanding of the effective quality management. It also provides a basis approach to teamwork, to analysis of continuous improvement and quality control. The responsibility of the leaders, including managers is emphasized. The course discusses the methods of quality control and improvement.

The key factors of the course are defining quality, and developing systems for monitoring and improving quality control. Prerequisite: Graduate Standing

MGTN 930 Strategic Operations Management (3)
This course is designed to give both a theoretical and practical background in strategic management. Strategic operations management concerns the essential activities of directing the varied processes of both manufacturing and service enterprises in both the domestic and Global environments. The course will analyze case studies related to the real challenges of management. It will develop awareness in business matters significant to fast moving high tech entrepreneurial environment. In addition, it will cover the strategic aspects of operations management. Prerequisite: Graduate Standing

MGTN 941 Entrepreneurship and Venture Capital (2)
The course discusses the entrepreneurship and emphases are on forming and operating new business ventures. It covers important aspects of looking for new business opportunities. This course teaches the students how to pursue entrepreneurial opportunity related to starting a new venture. It will also focus on the development of entrepreneurial opportunities and determine the feasibility of such opportunities in today's business environment. Prerequisite: Graduate standing

MGTN 942 Project risk management (3)
This course explores various ways to identify, and analyze the full range of project risks. It will also explores the six risk management: risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring and control. The students will use case studies to learn risk management techniques. Prerequisite: Graduate standing

MGTN 943 High-Technology Entrepreneurship (3)
This course is offered for those planning to undertake an entrepreneurial career in starting and building an international company in the high-technology area. A special effort is made to take advantage of ITU's proximity to the entrepreneurial community in Silicon Valley with its fundamental international business thrust. An integrative business plan for a new company in the technology arena is an integral part of the course. Prerequisite: Graduate standing

MGTN 944 International Management (3)
This course studies the role of managers in global markets. Topics include the external economic and political environment, international strategic planning, partnerships, global human resource management, managing technology, product and service design, ethics and leadership. The course utilizes innovative techniques and case study analysis from a variety of national, and multinational firms. Prerequisite: Graduate standing

MGTN 945 Pitching a Business to Venture Capitalists (or any investor) (1)
In today's extremely competitive world of raising money for startup companies, it is absolutely critical to have an effective and well-conceived pitch deck to compliment your vision and strategy. Only 1 of every 200 business plans submitted to venture capitalists (VCs) gets

funded, so it is vital to present a well thought-out presentation that includes all of the elements that VCs (or any type of potential investor) will be looking for in deciding whether to invest in your company or not. Whether you are interested in starting your own company someday, want to work for a startup, or just want to learn more about venture capital, Silicon Valley and startups in general, this will be a great opportunity to discover how startup companies have successfully raised money – and how you can too!

There are two different ways to get involved, depending on your level of interest:

How to Pitch a Business to Venture Capitalists (or any investor) – Joint Session lecture/panel

This class will be an option for students wanting to take a 1-unit Joint Session class and is comprised of attendance of two lectures:

1) September 26, 2009 10:00-4:00 How to Build a Pitch Deck for VCs

Students will get a brief history of venture capital and then learn what today's VCs are looking for in a corporate presentation. This includes company mission, business case, competitive landscape, financials, marketing plan, product, etc.   Even if you are not pitching to a venture capitalist, you will learn the necessary elements to pitch to bankers, angels, and other financiers.

2) December 5, 2009 10:00- 4:00 Pitch Day Panel

Students will attend the presentation of pitch decks that participants of MGMT945W will make to a panel of ITU professors. Each student in the audience will vote along with the ITU panel for the top teams based on the quality of their presentation.

You do not have to join a team (MGTN945W) to attend these lectures. Prerequisite: Graduate standing

MGTN945W: Building a Pitch Deck for Venture Capitalists (or any investor) – (2) Workshop

Participants will form teams (companies) of 2-4 people to take on the roles of a real life startup company (e.g. CEO, CTO, VP Sales, VP Marketing, etc.) During the course of the semester these teams will work diligently to create a pitch deck (of a real or fictitious company) that includes all the elements outlined in MGTN945.

On December 5, 2009 up to 10 of these teams will present their pitch decks to a voting panel of ITU professors and fellow students and also get feedback on their concepts and presentations.   The winning team(s) will then get the opportunity to take their pitch to a Silicon Valley venture capitalist!

This workshop is designed for current or future entrepreneurs or those who want to better understand what it takes to fund and/or work at a startup company. Prerequisite: Graduate standing and attendance of MGTN945

MGTN 946 Culture and Management in Asia (3)

The course examines the complex issues of interdependence among "culture" management philosophies, and corporate strategies in the Pacific Asian region. It provides conceptual tools to understand the dynamics of the interdependence, and contributes to developing skills in managing particularly joint ventures within local Asian environments. Prerequisite: Graduate standing

MGTN 947 High Performance Leadership (3)

What does it take to build a high-performance unit? The focus of the course is on individuals who are in the leadership positions, particularly

the middle and upper-middle management in contemporary complex organizations. The course shows that traditional methods of management may produce adequate levels of performance but prevent excellence from developing. More recent or new approaches to leadership will be discussed and lead to a high-performing system. Prerequisite: Graduate standing

MGTN 948 Project Management (3)

This course provides an overview of project management history, culture, methodologies, leadership and strategic planning. The course introduces important tools, such as work breakdown structure, scheduling, earned value analysis, and risk management. Case studies from a variety of organizational settings are discussed. The course discusses the 5 processes that must be done for project success: Define, Organize, Execute, Control and Close. The strategic implications of projects will be considered with respect to the organizational vision. Prerequisite: Graduate standing

MGTN 949 Organizational Behavior (3)

The course examines the role of perception, learning, motivation, leadership, organizational culture, communication, group and team dynamics, conflict, stress, and other factors that affect individual job performance and overall organizational performance. In addition, the course describes the relationship between the dual motive theory and the human behavior. Emphasis is placed on underlying causes of human behavior in organizations, and how to effectively manage behavior. Case studies are used to enhance learning and integration of key management skills related to managing human behavior at work. Prerequisite: Graduate standing

MGTN 951 Business Communications (3)

Communication is an essential component in every management task. One objective of this course is to provide a framework to approach communication challenges and make media, message, structure, and style choices. Another objective is to develop the oral and written communication skills required of managerial leaders. Barriers to communication, particularly cultural barriers will be analyzed. Prerequisite: Graduate standing

MGTN 952 Business Ethics (3)

This course introduces ethical decision making in business environment. It examines the individual, organizational, and macro level issues. The course does not attempt to determine correct ethical action. In the complex business environment in which managers confront ethical decision-making there is no absolute right or wrong answer in most cases. Since there is no general agreement on the correct ethical business norms, critical thinking and relevant decision making are examined. Prerequisite: Graduate standing

MGTN 953 Business Law (3)

This class is intended to inform and educate graduate business students of the legal requirements and risks associated with managing, owning and operating a high tech business in today's global economy. Prerequisite: Graduate standing

MGTN 954 Advanced Project Management (3)

This course offers a study of the human and the operational sides of project management. The human side includes discussion on negotiating and conflict management, leveraging diversity and selling project management. The operational side includes scope control techniques, risk management, and organizing for success. The students will learn how to effectively engage the project team, deal with the inevitable conflicts and use intellectual and cultural diversity to encourage creative problem solving. Prerequisite: MGTN 948

MGTN 958 Information Systems for Entrepreneurs (3)
The course provides the fundamental skills to manage an entrepreneurship operation in a small business and new venture. Training will be provided on basics of hardware and software, databases, networking, and common business applications. Prerequisite: Graduate standing

MISY 910 Business Database Applications (3)
This course provides a basic overview of the concepts, principles, skills and techniques of business database systems and of database application system development. The course provides an approach to the design and use of databases for business applications. The study focuses on query languages and application generation. Use of database software applications are a necessity in current business environments. Prerequisite: Graduate standing

MISY 911 Business Telecommunications (3)
The course offers an overview of communications technology used in many business applications - local area network, wide area network, broad band network, wireless and voice network. The course helps the students understand the role of internet protocols. In addition, it provides training to analyze network requirements, design and implement local area networks. Prerequisite: Graduate standing

MISY 912 Information Resource Management (3)
This course explains the concept of viewing information systems resources from a strategic resource standpoint. The course will provide pragmatic tools for implementing the IRM within the organization. Topics will include Information System outsourcing, total cost of ownership, Information System planning and strategic analysis, management of IT human resources, traditional project management theory, and project management techniques. Prerequisite: Graduate standing

MISY 913 Managing Global Information Systems Projects (3)
The course helps the students learn how to plan and manage global information systems projects by focusing on initiating, planning, executing, controlling and closing projects.   Topics such as integration, scope, timing, cost, quality, human resource, technology, communications, risk and procurement are discussed. The students will learn how to monitor project plans and communicate reports to clients. Prerequisite: Graduate standing

MISY 914 Information Systems Innovation (3)
This course provides the tools and the skills to leverage emerging information technologies in order to create new business opportunities for both new entrepreneurial ventures and traditional firms. The course helps the students to understand, evaluate, and apply difficult topics

such as new innovative and entrepreneurial information technologies. Prerequisite: Graduate standing

MISY 915 Management Information Systems (3)

This course explains the concept of managing information systems as a part of a broader socio-technical system and their impacts on people and processes in the business environment. Critical thinking is an important and essential part for the understanding of important issues associated with the management aspects of information systems. The course focuses on how the organization has used and can use its information resources to best serve its needs. Prerequisite: Graduate standing

MISY 920 Software Development Process Management (3)

This course helps the students to understand the software development process at both the project and organization levels. In addition, it provides the students the tools to analyze software cost and schedule transaction issues. And it teaches them how to apply the principles and techniques to practical situations. Topics include statistical decision theory, software risk management. Prerequisite: Graduate standing

MISY 925 Public Information Management (3)

The course presents an introduction to computers and information management systems in public sector organizations. Topics include data management, data analysis, public systems analysis, algorithm development, data base design concepts, and design support systems. The course focuses on the study of database and network technologies; the influence and relevance of information systems in public agencies; and the review of issues of ethics, and security as related to Information Systems. Prerequisite: Graduate standing

MISY 926 Strategic Management of Information Technology (3)

This course addresses some contemporary issues faced by general managers — e.g., globalization, and time compression. The course defines the information technology strategies of an organization. It will examine principles and concepts of strategic information technology systems, and systems development as it relates to information technology management strategy. Prerequisite: Graduate standing

MISY 930 Business Information Systems & Technologies (3)

This course provides the fundamentals of information systems and technology in business. The focuses are on the integration of business functions, and the strategic information systems. Topics include project planning, time, risk, and resource management in many business applications. In addition, the course will introduce information systems building and prototyping. Prerequisite: Graduate standing

MKTN 950 Entrepreneurial Marketing (3)

This course provides entrepreneurs with an understanding of marketing for new and small enterprises. It addresses marketing strategies. The Students will apply marketing concepts, such as creating and nurturing relationships with new customers, suppliers, distributors, employees and investors. This course brings together theory and practice to develop a comprehensive entrepreneurial business-marketing plan. Prerequisite: Graduate standing

MKTN 951 Competitive Marketing Strategies (3)

The course offers strategy development by discussing important analysis of various cases from consumer, supplier, and technological markets; production and service businesses for-profit and nonprofit sectors. The students will learn how to build a marketing plan. Prerequisite: Graduate standing

MKTN 952 Retailing and Supply Chain Management (3)

The course offers a critical analysis of retailing strategies and e-business sites to expand the company's markets, to provide service customers, and to increase the sales. The course also discusses the critical supply chain issues involved in commerce including inventory management, transportation, and procurement and warehousing. Prerequisite: Graduate standing

MKTN 953 International Marketing (3)

The course presents to the students the major factors of the international marketing decisions. The student will learn about the forces that influence the global marketing environment. The course introduces students to principles, policies, procedures, ethics, and techniques used in efficient and effective international market. International product, price, promotion, and distribution issues are discussed. Prerequisite: Graduate standing

MKTN 954 Marketing Research (3)

This course introduces the methods for collecting, analyzing, and interpreting data relevant to the marketing decision-making. The course focuses on structuring marketing problems, understanding the different sources of marketing research data, using particular techniques for analyzing marketing research data that helps to make better marketing management decisions. Prerequisite: Graduate standing

MKTN 955 Strategic Application of Technology in Marketing (3)

This course introduces technology efficiencies into the value chain that become critical to corporate strategy. The course will review the applications of the current and emerging technologies to the strategic creation, maintenance, and communication of value within the corporate value chain. In addition, it will provide the students with an overview of strategic technology process and its principal concepts. Students are encouraged to present actual marketing issues, to bring the ideas from Silicon Valley companies for discussion. Prerequisite: Graduate standing

MKTN 957 Consumer Behavior (3)

The course focuses on how to assess customer behavior and interprets this knowledge into marketing strategies. Topics include customer satisfaction and dissatisfaction; the role of quality, TQM, cycle time. In addition, the course introduces concepts such as, motivation, perception, knowledge, attitude, and culture on customer decision-making. The course is designed for students interested in consumer, service, high-tech, or not-for-profit marketing. Prerequisite: Graduate standing

MKTN 958 Marketing Management (3)

This course presents an approach to understand and manage the marketing function. The students will learn how to develop a written marketing plan to determine and integrate elements of a marketing

strategy. Topics include market segmentation, positioning and research; product decisions; pricing; channels of distribution; advertising; promotion; new product development; and marketing budgets. The course will introduce the role of marketing in the U.S. economy and the interaction of marketing with specific business functions and with society. Prerequisite: Graduate standing

MKTN 959 Advanced Marketing (3)

The course will explain the importance of marketing, which include market research, competitor analysis and the consumer analysis. The student will explore the marketing process, and concept. In addition, the course will provide a study of the relationship between the marketing mix, and the changing business environment. Prerequisite: Graduate standing

MKTN 960 Effective Marketing Planning In Dynamic Environments (3)

This course will develop the implementation, control and evaluation plans. It addresses the practical aspects of appraisal, prediction and monitoring of market factors that impact organizational performance. The course will explain how marketing decisions contribute to developing and maintaining competitive advantage in dynamic markets. Prerequisites: Graduate standing

MKTN 961 e-commerce (3)

This course provides introduction to e-Commerce and related subjects. The course will cover e-commerce infrastructure and its related technologies. Various business models used in e-commerce will be discussed in the lecture. The student will have knowledge of e-commerce when finishes this course. Prerequisite: Graduate standing

MKTN 965 Vendor/Seller Management (3)

This course will explain all aspects of outsourcing, including planning, finding the right vendor and negotiating effectively. Topics include relationship building, creating a culture of cooperation, and skills in dealing with vendor. The course will teach the buying and selling processes that corporations use in business-to-business transactions. The focus of the course is on the concept of selling, improving value, and meeting the needs of clients through effective questioning, analysis, sales planning and presentations. The students will learn the major phases of the sales process, the sales objectives for each phase, the client needs, and the solutions' presentation. Prerequisite: Graduate standing

SEN 911 Web Graphic Design (3)

This course is an introduction to graphic design theory with a focus on web design. It explores techniques top designers use for creating visually engaging web sites. Teaches the skills, knowledge, tools and the artistic guidelines needed for creating appealing, professional looking web pages. Distinction between vector and raster graphics; Adobe Illustrator (vector graphics), Adobe Photoshop (managing and editing raster graphics), Adobe Flash (animation), DreamWeaver (combining all through HTML).

Bachelor of Science in Business Administration

ACCT 100 Principle of Accounting I (3)

This course introduces the basic theory and techniques of contemporary financial accounting. Topics include the accounting cycle and the preparation of financial statements for Proprietorship business organizations that operate as service companies or merchandisers. In this course, an understanding of the accounting system of recording and analysis is introduced, and developed. This course introduces the current procedures of financial accounting and generally accepted accounting principles. The course emphasizes the analysis of business transactions. Ethics issues are also discussed. Accrual based accounting concepts, and internal controls are addressed as well as the accounting components of a corporate business entity.

ACCT 200 Principle of Accounting II (3)
This course is a continuation of the principles of accounting I (emphasizing accounting for liabilities, equity, and corporate forms of ownership). The course studies the accounting reports produced for financial decision making as most managerial decisions are based on financial information. The Balance Sheet and Income Statement are discussed through study of forms of business organization, annual reports of business financial statements. Statement analysis, accounting principles, procedures and techniques, assets management are also examined as components of the financial information system. Prerequisite: ACCT 100

ACCT 201 Managerial Accounting (3)
This course introduces the students to the principles, concepts, applications and processes of managerial accounting, and focuses on how internal users apply accounting tools and information to aid internal planning, coordinating and controlling the activities of an organization. The use of accounting information for managerial planning, control and decision making through cost analyses, and responsibility accounting is emphasized. Topics include job order, process cost, activity-based cost systems, profit analysis, product pricing, reporting concerns of decentralized operations, management accounting systems, cost behavior, product costing, business overhead costs, and the preparation of various inventory schedules. Prerequisite: ACCT 200

ACCT 300 Intermediate Accounting (3)
This course is an analysis of financial accounting topics involved in preparing financial statements and external reports. Current and fixed asset valuation, liabilities, corporate capital, and income determination are discussed. Emphasis is placed on the analysis of the balance sheet with the principal asset accounts shown on the face of the balance sheet. Topics covered are the accounting cycle, measurement of income, acquisition and disposal of assets, and the time value of money. Specific accounts examined include current and contingent liabilities, bonds, notes, corporate income taxes, leases, capital stock and retained earnings. The income statement, statement of retained earnings and statement of cash flows in accordance with generally accepted accounting principles are also covered. Other topics include financial statement analysis, revenue recognition rules, and accounting changes. Prerequisite: ACCT 201

ACCT 301 Cost Accounting (3)
This course is a study of the basic concepts of determining, setting,

and analyzing costs for purposes of managerial planning and control. The course is an emphasis of the role of the accountant in the management of organizations and in the analysis of standard costing, budgeting, actual and standard cost systems, and variance analyses, and costs that are relevant for making decisions. Various techniques, such as the use of problem sets, case studies, computer applications are used to study cost and managerial accounting concepts. Measuring managerial performance through an analytical treatment of cost behavior under dynamic conditions by employing tools such as transfer pricing and cost functions is discussed.
Prerequisite: ACCT 201

ACCT 302 Auditing (3)

This course is an introduction to auditing. Topics include generally accepted auditing standards, tests of controls and substantive tests, and report forms and opinions. Various techniques, such as the use of problem sets, case studies, computer applications, are used to study auditing concepts and practices. The main emphasis is on the auditor's decision- making process. Topics include concepts in auditing related to determining the nature and amount of evidence the auditor should accumulate, the objectives to be accomplished in a given audit area, the circumstances of the engagement, and the decisions to be made to determine the appropriate evidence to gather and how to evaluate the evidence obtained. Other topics, such as, ethical conduct and legal liability of auditors are also covered along with auditing within a computerized environment. Prerequisite: ACCT 200

ACCT 303 International Accounting (3)

The course is a study of accounting in a multinational context. Topics include evolving international accounting and reporting standards, problems of foreign exchange and taxation, intercompany transfer pricing, and emerging issues in international accounting. Analysis of accounting for multinationals; area studies of accounting and financial reporting standards; and an evaluation of the international accounting harmonization effort are introduced. Prerequisite: ACCT 201

ACCT 304 Accounting Information System (3)

The course is a study of the control aspects of accounting systems. Topics include setting standards; defining and imposing administrative, operational, and security controls; and judging cost-effectiveness of systems. Various techniques are used to study accounting information systems concepts; these may include the use of problem sets, case studies, computer applications, and other materials.
Prerequisite: ACCT 302

BUS 100 Introduction to Business (3)

This course examines the key functions and role of business and how the role and views toward business have evolved and continue to evolve at the local, national and global levels. Topics include human relations, technology in business, ethical behavior, the environment, global and economic forces, organization, quality, products and services, functional management, and current issues and developments. Through a combination of case studies, textbook, video and other resources, students will explore business and its key functions, as well as its current and potential future contributions to society.

BUS 101 Business Ethics (3)

The course is a study of the relationship of business ethics and social responsibility in both domestic and global settings. Ethical and moral considerations of corporate conduct, social responsibilities, policies, and strategies are explored. Emphasis is on the definition, scope, application, and analysis of ethical values as they relate to issues of public consequence in the context of the functional areas of business at both the domestic and global levels. Topics include application of the perspectives including moral issues, problems, and situations which arise within the business environment. Topics also include codes of ethics, conflict of interest, the work ethic, and fiduciary responsibilities.

BUS 102 Business Communication (3)

The course introduces the communication by and for all levels of management. It includes dynamics, strategies, and practices of written and oral methods, with appropriate techniques for clear effective communication in today's business environment. Writing is emphasized, and word processing is used to help students gain communication skills. The course includes effective methods and the application of the principles of written communication to business letters and reports, the development of listening skills, verbal, and nonverbal communication skills, the art of dictation, and presentational speaking techniques. The purpose of this course is to develop student skills for effective communication in business and professional settings. Consideration will be given to the effect of information technology on organizational communication, and issues relating to intercultural communication.

BUS 200 Business law (3)

The course introduces a conceptual and functional analysis and application of legal principles relevant to the conduct and understanding of commercial business transactions in the domestic and global environment. Topics include the legal, ethical, and social environment of business; agencies, partnerships, and other forms of business organizations; and contracts and sales agreements. Other topics include personal and real property, government regulations affecting employment and marketing, negotiable instruments, debtor/creditor relationships, and bankruptcy and reorganization. The main focus of the course is to illustrate how laws have a real-world impact on how businesses operate in the United States and globally. Topics include the nature of law and the legal process; contracts; torts; employment law; agency law; and environmental law.

BUS 201 International Business (3)

This course is designed to examine the basic issues concerned with international trade characterized by rapid change in worldwide political, economic, technological, and cultural environments. While the course focuses on management and financial practices, specific topics on the scope of international business; the multinational firm; government policies; products and manufacturing; and documentation are explored. Topics addressed include theories of foreign direct investment, evolution of the international monetary system, balance of payments, multinational business management, legal and political aspects of international business, socio-cultural dimensions, technology transfer, international human resource management, economic integration,

ethical issues for multi-national corporations and the future of international business.

BUS 300 Legal Environment of Business (3)

This intense, upper-division introductory law course explores the legal rights, liabilities of businesses, and regulatory environment of business. It examines law as the foundation for business; reviews the law as a method for dispute resolution through the court system and litigation; it explores the principles of contract law, criminal law and intellectual property and culminates with a review of various regulations impacting business. Topics include the development and nature of the legal system; ownership, torts and contracts; crimes, torts and product liability, agency and labor laws, consumer protection statutes, regulatory powers, and legislative, judicial, and administrative controls.

COM 100 Introduction to written Communication (3)

Introduction to Written Communication teaches the basic practices of argument, enabling students to gain competency in civic and academic discourse. This course is designed to equip students to improve their writing style and develop a sense of confidence, a degree of competence, and a set of criteria for evaluating their own writing and the writing of others. The course will include a review of the basic mechanics of writing (grammar, punctuation, etc.), a review of composition skills, and an introduction to specific needs for writing.

COM 101 Exposition & Argumentation (3)

This writing course stresses writing as a process, with due attention given to critical reading and thinking skills applicable to all college classes, as well as to invention, drafting, revising, and rewriting.

COM 102 Literature & Composition (3)

The coursework for American Literature and Composition will include analyzing short stories and essays by American writers to get a better understanding of how these works were put together. Students will also learn how to write essays of their own as a way to improve their written communication skills.

CONS 100 Consilience Theory 1 (3)

The focus of Consilience is to study the bridges between academic disciplines. In this course you will learn how the evolution of the human brain has shaped our various economic, political, and social structures in society. This course will give students an understanding of dual-motive theory, a universal behavioral algorithm for humans.

CONS 200 Consilience Theory 2 (3)

In this second course of Consilience students will study the primary algorithm of all life. This algorithm is defined in the second law of thermodynamics and was created at the time of the big bang. We will focus on establishing the connection from physics and chemistry into biology. Students will get a fundamental understanding of our place in the universe and how life has evolved on earth.

CONS 300 Consilience Theory 3 (3)

The third set of Consilience Theory will be an independent study where students will select two or more areas of study and research these

fields. Out of their research the student will write an academic paper, the best of which will be chosen to be published in ITU's press.

ECON 100 Introduction to Economics – Micro (3)
Topics include problems of international trade and finance, distribution of income, policies for eliminating poverty and discrimination, problems of environmental pollution, and effects of various market structures on economic activity. This course is an introduction to economics in general and to the study of microeconomics in particular. Economic theory and applications will be developed from a standpoint of the individual in the economy: the individual as a consumer of goods and a supplier of resources, the firm as a producer of goods and a purchaser of resources, and the operation of individual markets and industries.

ECON 101 Introduction to Economics – Macro (3)
The course is an introduction to the problems of unemployment, inflation, and economic growth. Emphasis is on the roles of monetary policy and fiscal policy in determining macroeconomic policy. The efficacy of controlling wages and prices is analyzed. This course emphasizes the problems of national income accounting, growth measurement, and fiscal and monetary policy. Economic theory will be developed from the viewpoint of society as a whole. The fiscal and monetary policy tools available to the government will be discussed. Keynesian and Monetarist economic theories will be used to demonstrate the effect that these government policies have on national income, employment, and price level changes. Prerequisite: ECON 100

ECON 300 Intermediate Microeconomics Analysis (3)
The course is an analysis of the principles underlying the behavior of individual consumers and business firms. Theories of marketing systems, distribution, and the roles of externalities are covered. This course is an analytical approach to the consumer, the firm and markets. The theory of pricing under conditions of perfect and imperfect market structures, the theory of factor markets are examined.
Prerequisite: ECON 100

ECON 301 Intermediate Macroeconomics Analysis (3)
The course is an analysis of forces that determine a nation's income, employment, and price levels. Topics include consumption, investment, inflation, and governmental fiscal and monetary policy. Examination of the factors that determine the level of income, employment, output and prices in an economic system. A review and analysis of recent U.S. economic policy and performance are also discussed.
Prerequisite: ECON 300

ECON 302 International Economics (3)
The course is a description of international trade and analysis of international transactions, exchange rates, and balance of payments. Policies of protection, devaluation, and exchange-rate stabilization and their consequences are also analyzed. Topics include theory of international trade, trade policy, and protectionism, foreign exchange markets, income and foreign exchange, balance of payments, the international monetary system, international finance and the world debt situation. Emphasis will be on understanding policies in a global community. Attempts will be made to explore the interaction of Western culture with non-Western culture including similarities and the differences in values and patterns of behavior. Prerequisite: ECON 301

FINN 100 Introduction to Finance (3)
This course introduces students to the principles, concepts, and applications of finance. Concepts are illustrated with examples based on personal, business and non-profit organization decisions. The course is intended for students who are interested in learning basic tools and techniques of finance and how they are applied. The topics of the course include: financial markets and valuation of assets; theory of interest rates; portfolio theory; asset pricing models; and introduction to corporate finance. Prerequisite: ACCT 100

FINN 200 Personal Finance Concepts (3)
The development of personal financial management skills (e.g., budgeting income and expenditures, planning for financial security and retirement) is encouraged, while an understanding of elements of the U.S. financial structure (including savings and investment alternatives, financing and credit sources, the role of insurance in protecting income and assets, and federal income tax issues) is provided. The sources of personal income, saving and consumer spending patterns are discussed. The development of techniques for planning the budgeting consumption expenditures and saving, with special emphasis on the use of saving allocations to achieve personal goals, real property, insurance, financial investment, retirement, estate and tax planning. Prerequisite: FINN 100.

FINN 201 Financial Management (3)
This course is an analysis and discussion of the financial decisions of national and multinational corporations, based on case studies and reading. Financial principles and concepts are applied to solve financial problems and make financial and corporate policy at the executive level. Topics include assessment of the financial health of the organization, short-and long-term financial management, project and company valuation, cost of capital, risk analysis, investment decisions, and capital markets. Prerequisite: FINN 100.

FINN 300 Business Finance (3)
The course is an overview of the theory, principles, and practices of financial management in a business environment. Topics include financial analysis and financial risk, characteristics and valuations of securities, capital investment analysis and decision making, the capital structure of the firm, financial leverage, and international finance. Emphasis is on the application of financial theory and methods for solving the problems of financial policy that managers face. The three principal tasks are to assess a business enterprise's financial needs, to acquire the funds the enterprise requires, and to allocate these funds in the business in the most profitable and economical way. Topics include a study of financial performance characteristics underlying investment and financing policies and international financial policies. Prerequisite: FINN 100.

FINN 301 International Banking and Finance (3)
The course is an analysis and discussion of financial management issues from the perspective of the multinational firm. Topics include the organization and functions of foreign exchange and international capital markets, international capital budgeting, financing foreign trade, and designing a global financing strategy. Emphasis is on how to manage financial exchange and political risks while maximizing benefits from

global opportunities faced by the firm. The course includes an examination of the structure of financial institutions and their role in providing money and near-money. Prerequisite: FINN 100.

FINN 302 Risk Management (3)

A financial institution faces market and credit risk every day: Changes in foreign exchange rates, interest rates, stocks, and commodity prices make organizations vulnerable to financial loss. As a result, uncertainty surrounds an organization's future and the fair market values of its assets and liabilities. This course offers insight on managing uncertainties and the successful use of hedging strategies and derivative instruments, demonstrating how to aggregate information from across an organization, combine different instrument types into one portfolio, perform scenario and stress tests, calculate at-risk measures, and deliver a customized report. Also presented is an overview of the most recent techniques used in credit-risk management, aimed at new models in this fast-developing area. Examples taken from well-known cases underline the importance of an adequate credit-risk management system. Prerequisite: FINN 100.

FINN 303 Corporate Finance (3)

The objective of the course is to study financial aspects of managerial decisions and the capital markets in which firms raise funds for investment. Tools needed for valuing investment projects, such as the determination of the relevant cash flows, estimating cost of capital, and dealing with risk are developed. These basic tools to value companies and to select investment projects will be used. Finally, companies finance their investments were analyzed: what determines a company's need for external financing, be it debt or equity, and how to choose the optimal debt-equity mix. Prerequisite: FINN 100.

FINN 304 Entrepreneurship and new venture Creation (3)

The course is an overview of entrepreneurship and planning new business ventures for prospective entrepreneurs and managers. Topics include developing entrepreneurial ideas and innovations; strategic planning; marketing research, analysis, and planning; advertising, promotion, and sales; financial planning and financing; operations and services planning; human resources planning and management; analysis of risk; information management strategy and the Internet; legal aspects of new venture formation; and global venturing. Discussion and group activities focus on development of a business plan, the factors that should be considered, and the entrepreneur's role in developing and operating a new business. This course will explore the key drivers in the growth of entrepreneurship and the factors that contribute to entrepreneurial success and failure. Prerequisite: FINN 100.

FINN 305 Entrepreneurial Finance (3)

This course examines the basics of financial analysis, cash flow, credit and lending, the process of financing and financial growth of a new venture. The student will be introduced to obtaining and using various financial resources. The student will also learn how to create value using financing and financial structure as well as how to measure the value of a firm that might be used to purchase the operations. Topics include financial statements, forecasting, banking, venture capital, financial resources, business plan as related to financial information, and management of the financial resources of the firm.

Prerequisite: FINN 100

GRN 497 Joint Seminar (3)

HRM 100 Human Resource management (3)
The course is a basic study of human resource management. Topics include human resource planning and the recruitment, development, compensation, and appraisal of employees. This course explores the human resource management function in a corporate setting and focuses on the development of knowledge and skills that all managers and leaders need. The course will focus on such subjects as the selection process, employment law, labor relations, performance, corporate training, and maintaining effective environments.

HRM 300 Managing Diversity in the Workplace (3)
This course will introduce students to various theories on managing diversity and the importance of employee diversity to organizations. Students will be expected to provide different perspectives based on their experience with diversity and describe organizational practices implemented to manage it. Highlighting contemporary organizational diversity challenges and successful diversity practices and strategies, students will discuss the value diversity brings to the workplace and business. Upon completion of the course, students will have developed practical skills in and knowledge of diversity training as a tool to be successful and increase productivity and mobility as a professional entering the workforce. Prerequisite: HRM 100

HRM 301 Employee Training and Development (3)
The course is an examination of employee training and human resource development in various organizations. Topics include the development, administration, and evaluation of training programs; employee development; career development; and organizational change. Issues in employee development (including assessment of employee competencies, opportunities for learning and growth, and the roles of managers in employee development) are explored.
Prerequisite: HRM 100

HRM 302 Conflict Management in Organizations (3)
And introduction to processes observed in and management of conflict within organizations. Topics include general models of conflict, methods of managing conflict, and issues related to disagreements in organizational contexts. Prerequisite: HRM 100

HRM 303 Organizational Culture (3)
The course is an examination of the nature, definitions, theories, and aspects of organizational culture. Analysis covers patterns of behavior and their relationship to organizational culture, especially the impact of the organization's business on employee behavior and culture. Topics include the role of nationality, gender, and race within organizational culture; implications of addressing organizational challenges; theory versus practice; and the relative roles of the individual, groups, and the organization in a cultural context. Prerequisite: HRM 100

MATH 100 Business Math (3)
This course is a brief review of basic mathematics and introduces key business topics such as bank services, payroll, annuities, stocks and bonds, and business and consumer loans. In this course, students will

develop skills in the practical applications of arithmetic and mathematical concepts appropriate to the various occupational programs in business. The student will develop the ability to work with percentages, proportions, ratios, tables, charts, graphs, and the scientific calculator in the solution of business problems. The student will also be able to represent data by the use of basic statistical measures. This learning program will also acquaint students with some of the terminology of business and some of the ways in which they can benefit as consumers by an increased awareness of simple business mathematics.

MGT 100 Principles of Management (3)

Topics include managerial functions, motivation of employees, the decision-making process, communication, responsibility, authority, and personnel management through class discussion and case studies. This course introduces the student to the field of management and explores in depth the five functions of management planning, organizing, influencing, leading, and controlling. This course also presents the evolution of management theory, relates this theory to practical situations, and emphasizes the importance of management skills and knowledge.

MGT 101 Small Business Management (3)

The course introduces the fundamentals of business management, including planning, raising capital, using business information, managing employees, and marketing products and services. The course is oriented toward principles needed to operate a small business. This course focuses on problems, skills, and techniques involved in getting a small business started, including topics such as buying a going concern, selecting location, financing and organizing the business; and operating the business, including topics such as staff relations, insurance, supplies, pricing, advertising, credit, inventory control, profit and cost control, taxes, and record systems. Prerequisite: MGT 100

MGT 200 Analytical Decision Making (3)

This intensive course focuses on building creative and analytical skills for making decisions across a range of managerial settings. Topics include decision analysis and modeling; uncertainty and risk assessment; preference and utility evaluations; and game theory and applications. Prerequisite: MGT 100

MGT 201 Strategic Management (3)

A study of strategic management that integrates knowledge gained through coursework and experience and builds on that conceptual foundation through integrative analysis, practical application, and critical thinking. Emerging issues in business management are considered. Focus is on the continuous, systematic process of managerial planning, including environmental scanning and the development of plans and strategies to gain competitive advantage. Tactical and strategic management issues are highlighted by means of case studies, projects, and discussion. Prerequisite: MGT 100

MGT 300 Organizational Behavior (3)

An examination of research and theory on the forces underlying the way members of an organization behave. Topics include the behavior of work groups and supervisors, intergroup relations, employees' goals

and attitudes, problems in communication, the circumstances of change in an organization, and the goals and design of an organization. Prerequisite: MGT 100

MGT 301 Cross - Cultural Management (3)

This course aims to provide students with theoretical and practical tools and a sound knowledge of the most significant cultural dimensions, in order to improve their effectiveness in international activities. Students will become more aware of the impact of national cultures on business and of their own cultural preferences, and be given the opportunity to compare them with those of major economies. The course analyses the consequences of each cultural dimension on key management functions. Prerequisite: MGT 100

MGT 302 Global Strategy and Policy (3)

The course provides an examination and analysis of global business in its historical, theoretical, environmental, and functional dimensions. Focus is on understanding the growing economic interdependence of nations and its impact on managerial and corporate policy decisions that transcend national boundaries. Topics include the nature and scope of international business; the institutional, sociocultural, political, legal, ethical, and economic environments; trade, foreign investment, and development; transnational management (including global operations), strategic planning, human resources, marketing, and finance; and international business diplomacy and conflict resolution. Prerequisite: MGT 100

MGT 303 Operations and Project Management (3)

The course is an introduction to project management principles, concepts, and software applications and an exploration of project management applications in introductory project situations. Emphasis is on the project management in terms of practical applications and practices. Appropriate organizational structures, such as collegial and matrix types, are described and assessed. Discussion also covers the practical considerations of designing a project management system. Projects depict real-word situations such as production in research, high-technology manufacturing, and engineering firms; information systems implementations; service business and e-commerce projects; and consulting practices. Through a combination of case studies, textbook, video and other resources, students will learn how a firm's technology, facilities, processes, relationships and management practices enable it to effectively and efficiently serve its markets. Prerequisite: MGT 100

MGT 304 Introduction to Entrepreneurship: Starting a Small Business (3)

The course is an introduction to entrepreneurship and the concept of starting a small business. Topics include the costs and benefits of operating a small business venture and types of small businesses that can be successfully operated from the home. They also include locating and using primary and secondary research to prepare a business plan, assessing formats for presenting it, finding sources of assistance in preparing it, writing it, and identifying who should prepare it. Special considerations and laws that apply to small business operations are also covered. Prerequisite: MGT 101

MGT 305 Entrepreneurial Value Chain Management (3)

This course examines the management and optimization of various operations of a business. The student will learn how to handle vendors and purchasing, managing quality projects, along with logistics and inventory. The student will understand the various aspects of the supply chain in order to reduce the obstacles and maximize the efficiency and effectiveness of the operations of a new venture. The student will learn how to identify and assess risk concerning the business and learn how to manage the resources of the business so that the business is efficient and effective. Prerequisite: MGT 100

MGT 306 Entrepreneurial Strategy (3)

This course focuses on how entrepreneurial strategy focuses on creating structural change or responding to change induced externally. It also covers an analytical framework for developing entrepreneurial strategy to increase success in creating and shaping the diffusion of new technology or product innovation dynamics. It includes modeling, case studies, and term project. Prerequisite: MGT 100

MGT 307 Management and Organization Theory (3)

The course is a study of the development of theories about management and organizations. Processes and functions of management discussed include the communication process, the role of the manager as an organizer and director, the determination of goals, and the allocation of responsibilities. Prerequisite: MGT 100

MIS 100 Introduction to Information Systems (3)

The course is an introduction of the concepts vital to the definition and utilization of information. It includes the study of techniques and structures that apply to the acquisition, storage, and processing of data into information, and how institutions use these techniques and structures to solve problems, make decisions, and manage resources. It examines how innovations in technology provide information access to an ever-widening population and the implications of and problems associated with this phenomenon for both the present and the future.

MIS 200 Management Information System (3)

Students learn the concepts underlying the design, implementation, control, evaluation, and strategic use of modern, computer-based information systems for business data processing, office automation, information reporting, decision-making, and electronic commerce. The major emphasis of the course will be on the managerial and strategic aspects of information technology. Prerequisite: MIS 100

MIS 300 Information System Issues for Global Business (3)

This course explores the role information technologies and information technology infrastructures have on the business in the global marketplace of today. It examines how businesses use networked digital information technologies as part of global e-business strategy, how key systems integration becomes a critical part of enterprise solutions, and how business value in today's competitive world is tied to the design and management of the latest technologies used in information systems in this digital age. Prerequisite: MIS 100

MIS 301 Information Technology Project Management (3)

This course provides an introduction to the concepts of information technology project management and techniques throughout the project life cycle to accomplish project goals. The course focuses on the role of

the project manager who is responsible to determine customer requirements, set objectives related to stakeholder needs, and utilize project management means to complete the work on time, and within budget. Key topics include project selection, integration, scope, time, cost, quality planning and management, performance measurement, team building, project communication, and risk identification. Prerequisite: MIS 100

MKT 100 Principles of Marketing (3)

The course introduces the principles, the methods, and the problems involved in marketing. This course develops a general understanding of the forces, and institutions. Topics include segmentation, target marketing, positioning, developing new products, pricing, distributing and promoting goods and services, and sales and marketing management. An important goal of this course is to discuss policies of distribution, sale of products, and buyer motivation.   In addition, it examines characteristics of marketing research, legal, social, and ethical, e-commerce considerations.

MKT 300 Advertising Theory and Practice (3)

The course explains the role of advertising in the marketing of goods and services. Topics include the effects of advertising on the legal, social and economic aspects of the industry; the methods and techniques used; the functions of newspapers, magazines, and other types of media in creating the advertising operation. Theories and methods of research to improve the efficiency of advertising are discussed. Prerequisite: MKT 100

MKT 301 Sales Promotion and Retail Behavior (3)

The course introduces the principles and practices of sales promotion, and retail behavior. Topics include marketing and economic concepts, finance, data, inventory, distribution, risk management, pricing, promotion, purchasing, selling, customer service, and retail professions. This course focuses on the various components of the retail trade, the distribution channel, and the retailing mix. In addition, subjects, such as, retail advertising and publicity are discussed. Prerequisite: MKT 100

MKT 302 E-Marketing (3)

The course is an exploration of how the use of Web-based computer applications and databases can enhance the marketing process and create relationships with customers. Topics include the use of the Internet in developing marketing strategy, conducting market research, and making marketing-mix decisions. Emphasis is on the Internet as a national and global marketing communications tool. Discussion also covers creative Web site design techniques to measure advertising effectiveness. Prerequisite: MKT 100

MKT 303 Strategic Marketing Management (3)

This course is about business marketing strategy. After taking this course the student should be able to develop a framework for making strategic plans involving marketing of products and services. Market segmentation, product positioning, decision making based on the information available and obtaining feedback are all important parts of business marketing strategy that the course will cover. Projects and case studies will be included to gain a better working knowledge of the matters at hand. As in the business world, the course requires oral

presentations and team assignment projects. Prerequisite: MKT 100

MKT 304 Service Marketing (3)
The primary objective of this course is to provide the MBA student with an understanding of the unique challenges involved in marketing and managing services. Students use concepts and frameworks covered in this course to analyze a real service organization and recommend appropriate strategies. Ethical and global issues are discussed as they relate to services marketing. Prerequisite: MKT 100

MKT 305 International Marketing (3)
Utilizing concepts learned in basic marketing and international business, students explore the significant marketing problems related to the global market. Market research, product constraints, pricing, distribution, and promotion are studied in depth. This course introduces concepts and strategies for successful global marketing management. Topics covered include the global economy, the impact of cultural, social, economic, political and legal forces on global marketing, global markets and buyers, international and global marketing research, product and service strategies, new product development, international channels, and advertising, organizing, planning and controlling, and export and import trade. Prerequisite: MKT 100

MKT 306 Consumer Behavior (3)
The course is an overview of the increasing importance of consumers in the marketing system and the importance of understanding them. Discussion covers the foundations of consumer behavior (such as economic, social, psychological, and cultural factors). Consumers are analyzed in marketing situations as buyers and users of products and services and in relation to the various social and marketing factors that affect their behavior. The influence of well-directed communications is also considered. Prerequisite: MKT 100

QBA 100 Business Statistics (3)
The course is an introduction to the essential concepts of statistics for business and management. Concepts reviewed include descriptive statistics, probability theory, discrete and continuous probability distributions, sampling theory, estimation, hypothesis testing, regression, and decision theory. Discussion also covers the application of these concepts to solving problems in business and management.

QBA 200 Quantitative Approach to Business Decisions (3)
Quantitative approach is one of scientific methods in making business decisions. In this course, mathematics formulas, models, or algorithm are used in determining decision variables. Quantitative approach presumably disregards emotional/ psychological content that may affect decision maker in formulating problems, finding most fitted alternatives, gathering appropriate/ relevant data, testing the result and in applying the decision. However, this course will introduce some decision theory models that in some extents will quantify psychological effect on the rationale of a decision. The models, formulas, and algorithms will not only be used in operations research/ strategy but also will be useful in making a good and rational decision in the area of marketing, finance, and human resource management. Prerequisite: QBA 100

QBA 301 Probability and Statistics (3)

This course is an introductory course in probability and statistics, covering methods for organizing and summarizing data, elementary probability, and an introduction to statistical hypothesis testing. Topics include inference for two populations, population standard deviations and proportions, chi-square procedures, descriptive and inferential methods in regression and correlation, analysis of variance, multiple regression analysis, model building in regression, and experimental design and analysis of variance.

QBA 302 Statistics and Management Science (3)

Statistics is used in various areas of business, industry, science, and government. This course teaches quantitative methods used in data analysis and business decision-making. Topics covered include: descriptive statistics, correlation and regression, hypothesis testing, statistical quality control, forecasting, linear and integer programming, and computer simulation. Business applications of these techniques are emphasized. Students in this course will acquire expertise in computer-based methods for data analysis and decision-making, through computer analysis of business datasets. Prerequisite: QBA 200

7. Facilities

Library Resources

ITU has sought to increase the research, vast reference support and library resources made available to ITU students, particularly our masters students who need the most up to date research data, most commonly found in expensive subscription-based computer databases. In August 2005, ITU donated its 11,000 volume library to the Martin Luther King, Jr. Library and now direct ITU students to this wonderful resource.

All ITU students now have FULL ACCESS to the resources of Martin Luther King, Jr. Library, the main library of and located at San Jose State University, at 150 E. San Fernando (at Fourth Street), San Jose, CA. The library is a 14 minutes drive from ITU.

All ITU students access privileges include: obtaining a library card; checking out books, CD's, DVD's and other materials; utilizing the full multimillion dollar subscription-based university computer databases on campus; complete support from the university librarian; telephone reference support during library hours; support for multi-lingual students (including students who speaking Mandarin, Cantonese, Korean or Japanese); and full wireless access with their laptops within the library, and/or DSL direct connection services for those without a wireless card to store legally downloadable research data obtained from the library.

In addition to all the available volumes of hard cover books and publications at the library, students have access to the latest in the following databases.

For ITU MBA students, at no extra charge, the following paid subscription-based database access include the following:

ABI/INFORM Global - Indexing and full text for standard magazines and scholarly journals in business and economics.

America's Newspapers: California - Full text of many California newspapers, including the San Jose Mercury News, Los Angeles Times, Sacramento Bee, and the San Francisco Chronicle.

Business & Company Resource Center - *(formerly Gale Business Resources)* Data on companies and industry groups. Company profiles include selected brand listings, company histories, and SEC reports. Industry information includes an overview and analysis of the industry with market share, company rankings, financial ratios and other statistical information.

Business Full Text - Indexes and abstracts articles from leading business magazines and trade and research journals in English, published in the USA and elsewhere. Since 1995 it includes the full text of selected periodicals. The abstracts (summaries) range from 50 to 150 words and describe the content and scope of the source articles.

Business Source Premier - Full text for newspapers, books, scholarly journals, standard business periodicals and country economic reports. Over 200 of the journals have PDF full text back to 1965 or to the first issue published. Can search by ticker symbol, NAICS/Industry code, or Duns number.

CCH Internet Tax Research Network - Tax research materials, replacing the Standard Federal Tax Reporter in paper and CD-ROM. U.S. and California tax codes, regulations, rulings, procedures, decisions and other developments in the field of taxation.

Communication Abstracts - Indexes and abstracts journal articles, reports, and books in general communication, mass communication, broadcasting, speech, advertising, public relations, journalism, radio and television, etc. It provides worldwide coverage from 1977 forward. The print equivalent is *Communication Abstracts*.

CQ Researcher - This weekly publication gives background information on current and controversial issues. Includes pro and con arguments, bibliography, contacts, chronology and future outlook.

Dun & Bradstreet Million Dollar Database - A directory of U.S. companies, including location, contact information, total sales, number of employees, brief executive biographies and other data.

EconLit - Access to the American Economic Association databases, *Index of Economic Articles* and *Journal of Economic Literature*. It also indexes journal articles and book reviews from 260 economics journals and about 200 monographs each year.

Economic Census - The Economic Census profiles the U.S. economy every 5 years, from the national to the local level. Statistical tables in HTML (web page) and PDF formats. Includes reports for individual states, zip code and by broad market sectors.

ERIC via CSA - Citations to journal articles and documents covering education at all levels, child development, educational psychology and librarianship (1966 - present).

Factiva - General news and company, industry, and other business information (mostly full-text) from newspapers, newswires, magazines, trade journals in 22 languages from 118 countries. A joint project of Dow-

Jones & Reuters, it includes color pictures from Reuters and Knight-Ridder publications, company reports, SEC filings, web contents, and transcripts from BBC, ABC, CBS, NBC, Fox, CNN, NPR and more.

Financial Accounting Research System (FARS) - FARS is the source for primary accounting research. FASB-OP gives the full text of all AICPA and FASB pronouncements. FASB-CT covers general and industry standards relating to accounting. EITF gives the full text of abstracts for every issue discussed by the Emerging Issues Task Force. FASB-Q&A gives special reports on individual FAS. FASINDEX provides a topical index for these databases.

GPO on Silverplatter - Index to publications of U. S. Government agencies, including works such as monographs, serials, maps and some audiovisuals.

Hoover's Company Profiles - 2,500 in-depth company profiles including operations, officers, strategies, competitors, histories, locations, products & brand names, and financial information.

Lexis/Nexis Academic - Complete text of newspapers, magazines, newswires, transcripts of TV and radio news, trade publications, laws and court cases. "Foreign Language News" section includes articles in Spanish, French, Dutch, Italian & German. Company information includes annual reports (NAARS), SEC Reports, and Hoover profiles.

Rand California - Database on California, its cities and counties-- economy, crime, school test scores, statistics; online index of public policy and research publications; calendar of workshops, seminars, and other discussions; federal policy bulletins ; bulletin on state policy developments; monthly reports on the California economy.

RDS Business Reference Suite - This database provides balanced and highly-focused full-text coverage of company and industry news, management practices, and market research information. It's essentially a core business reference collection featuring more than 1,400 leading worldwide business sources, plus tens of thousands of tables containing strategic data.

Regional Business News - Business news from local English-language business journals, newspapers and newswires covering many metropolitan and rural areas within the United States.

Standard & Poor's Publications - Electronic versions of *Industry Surveys* (which covers trends, outlook and comparative company statistics for specific industries); *Stock Guide* and *Bond Guide* (with prices and other trading information) and *Stock Reports* (which reports on financial and trading activities of important companies).

StatUSA - Reorts and statistics on export and international trade (*National Trade Data Bank, Survey of Current Business*), domestic economic news (retail sales, CPI), business leads (Commerce Business Daily), and other economic information (Economic Report of the President). Data are gathered from 50 federal agencies.

Value Line Investment Survey Online – Standard Edition -   A software program to help investors analyze and select stocks. A broad range of functions can be performed (e.g. sorting, filtering, graphing and reporting) on individual or groups of stocks. Each stock is described by over 200 categories of data.

Zacks.com - Research on 6,000+ publicly traded companies compiled from over 2,500 analysts at more than 240 different brokerage houses. Relevant to all disciplines of business (i.e. Finance, Accounting, Management, and Marketing). Includes company and stock news and information (and some mutual funds), analysis, rankings, investment advice.

For ITU MSCE, MSEE, MSSE students, at no extra charge, the following paid subscription-based database access include the following:

Academic Search Premier Full text for more than 4,650 publications, including more than 3,600 peer-reviewed journals. PDF backfiles to 1975 are available for over 100 journals. Designed specifically for academic institutions, it's the world's largest multi-disciplinary database. The majority of full text titles are available as searchable PDFs, and some are scanned in color. This scholarly collection offers information in nearly every area of academic study including: computer sciences, engineering, physics, chemistry, language and linguistics, arts & literature, medical sciences, ethnic studies, and many more

Engineering Village 2 Covers engineering, patents, technology, applied sciences.

ENGnetBASE Electronic full text of over 100 engineering handbooks published by CRC Press. They are searchable by topic or keyword. The collection is also browsable by category (for example, Nanoscience/Nanotechnology, Chemical Engineering, Material Science, Mechanical Engineering, etc.). New handbooks are continuously added to ENGnetBASE.
IC Master IC Master is a database of currently available integrated circuits. Using this resource you can review the latest IC product information; identify manufacturers and second sources; locate manufacturers and distributors.

IEEE Xplore Covers electrical, electronic and computer engineering.
 INSPEC Ondisc Physics, electrical and electronic engineering, computer engineering, materials engineering, manufacturing and control engineering, communications and information technology.

NIST Scientific and Technical Databases NIST Data Gateway-provides easy access to many (currently over 80) of the NIST scientific and technical databases. These databases cover a broad range of substances and properties from many different scientific disciplines. The Gateway includes links to free online NIST data systems as well as to information on NIST PC databases available for purchase.

ScienceDirect Full-text articles, primarily science, technology and medicine (STM). Covers a few journals in the arts, humanities and social sciences; also includes some reference e-books.

<u>Wiley Interscience</u> Covers sciences, business, law and education.

For ITU Bio Management and Pharmaceutical Science students, at no extra charge, the following paid subscription based database include the following:

<u>Age line -</u> Aging and middle age, from the perspectives of psychology, economics, sociology, gerontology, public policy, business, health and health care services, and consumer issues. References to documents on health care and policy comprise about half of the ... more details.

 <u>Biodiversity Heritage</u> Library Full Text - The BHL will provide basic, important content for immediate research and for multiple bioinformatics initiatives. For the first time in history, the core of our natural history and herbaria library collection.

 <u>Biological Abstracts -</u> Indexes original research (primary) articles in biological and biomedical journals. Includes traditional areas of biology such as botany, zoology, and microbiology, as well as related fields such as biomedicine, agriculture, pharmacology and ecology

<u>Bio One Full Text -</u> Full text of over 110 scholarly, peer-reviewed bioscience journals from approximately 50 scholarly publishers.

<u>CHEM net Base Full Text -</u> Online versions of major chemical reference works: The Combined Chemical Dictionary; Handbook of Chemistry and Physics; Polymers - A Property Database; Dictionary of Commonly Cited Compounds; Properties of Organic Compounds.

<u>CINAHL Plus with Full Text -</u> Indexes the literature of nursing, occupational therapy and other health professions. Virtually all English-language publications are indexed along with the publications of the American Nurses Association and the National League for Nursing.

 <u>Encyclopedia of Life Sciences Full Text -</u> Over 3,000 specially commissioned and peer-reviewed full text articles, written by 5,000 scientists. Covers biological sciences, medicine, science, ecology, genetics.

 <u>General Science Full Text Full Text -</u> Basic professional journals and popular science magazines in all sciences. Full text begins in January 1995; indexing/abstracting goes back to 1993.

<u>ICPSR - See Inter-University Consortium for Political and Social</u> - Research (ICPSR)Full Text Maintains and provides access to a vast archive of social science data for research and instruction, such as population, economics, education, health, social and political behavior, social and political attitudes, history, crime, aging, and substance ...

 <u>Ingenta</u> - is a platform offering full text access to approximately 200 scholarly and academic journals in a variety of subjects. Additionally, the collection of citation data includes some 20 million articles from 30,000 publications.

 <u>Medline -</u> Citations and abstracts from biomedical journals published in the U.S. and 70 other countries, dating back to the mid-1960's. Most records

are from English-language sources or have English abstracts. Also called Plumbed. Merck Manual Home Edition Full Text - Vital information about diseases, diagnosis, prevention, and treatment. Based on The Merck Manual of Diagnosis and Therapy this edition transforms the language of the professionals' version into commonly used English.

Papers Invited Full Text - Papers Invited was conceived and developed to assist researchers at all levels - scientists, professors, post-docs and students who are seeking publishing opportunities for their research papers. It presents a list of Calls for Papers issued by professionals.

Science Direct Full Text - Full-text articles, primarily science, technology and medicine (STM). social sciences; also includes some reference and e-books.

TOXNET/TOXLINE - Indexes publications on the toxicological, pharmacological, biochemical and physiological effects of drugs and other chemicals--including journal articles, monographs, technical reports, theses, letters, and meeting abstracts, papers and reports.

Computer Labs

Computer facilities include an 8 station lab and full T-1 wireless Internet connections. The labs are open from 10:00 AM to 9:00 PM Monday through Friday, and limited hours on Saturday and Sunday. Please check with the Registrar for current access hours during each particular term. Hours may be modified from time to time as necessary for efficient operations. The use of computers at ITU is an integral element of all disciplines. All students are required bring in their own laptop computers with software necessary as determined by instructors for ITU class work.

8. Student Activities and Services

Academic Advisement

Each student is assigned an academic advisor, who will on a regular basis give academic advice regarding the student's progress.

Placement Assistance

ITU provides a variety of services to assist students in clarifying, planning, and achieving their career goals. Workshops will be held regularly on career planning, including self-assessment, resume writing, interviewing skills, and job search strategies. Programs will be developed that bring professionals from various fields to present information concerning career opportunities weekly in the Joint Seminar class required of all students. Students are encouraged to take advantage of this exposure to industry leaders and continually collect networking contact information from the Joint Seminar class. A special program of informational interviewing will link students with alumni in a variety of fields.

Student Health, Safety, and Housing

All full-time students are required to have their own medical insurance coverage.   ITU will assist them in contacting appropriate insurance companies.   The University does not provide on-campus housing for students. However, students should not have difficulty finding accommodations near campus.   Average monthly rent of a single room ranges from $400-$550.

Student Governance

The ITU Student Association offers students the opportunity to participate in the governing of the institution. Elected officers interact regularly with assigned faculty advisors to coordinate student functions, organize extra-curricular activities, and offer student input concerning university policy.

Student Organizations and Alumni Association

Students at ITU are free to organize and to join associations whose stated purpose is consistent with the University's mission. All student organizations seeking ITU support   must be registered. The ITU Alumni Association is operated under the Chancellor's Office of the University, keeping a current list of all alumni, and conducting alumni activities on a regular basis such as class reunions and career counseling.

Academic Achievement Recognition

Faculty   and   student   awards   are   given   annually   during commencement ceremonies to recognize the outstanding achievements of faculty, staff, and students.

Tutorial Programs

A tutorial program will provide international students with assistance in English studies in addition to ITU's regular tutorial classes for academic courses conducted by our teaching faculty and teaching assistants.

Nonimmigrant Alien Student Services

ITU is authorized under Federal law to enroll nonimmigrant alien students. Nonimmigrant alien students requesting supporting documents must submit a financial statement showing adequate funds for tuition fees

and living expenses for the entire degree program (no less than USD $15,000).

An acceptance letter together with the supporting documents will be issued to an admitted nonimmigrant alien student, who must submit these and the necessary financial affidavits to a U.S. Consular Officer to whom he/she applies for a student visa.

All enrolled nonimmigrant alien students cannot miss more than 15 percent of their classes without endangering their visa status.

Students are allowed only 3 unexcused absences. If a student misses two consecutive classes, the student will receive a warning. If the situation persists, the director of the program will contact the student. If it continues, it will be referred to the President's Office. If the problem remains, ITU is required to report this to the Bureau of Citizenship and Immigration Services.

Student Tuition Recovery Fund

The Student Tuition Recovery Fund (STRF) was established by the Legislature to protect any California Resident who attends a private postsecondary institution from losing money if the student prepaid tuition and suffered a financial loss as a result of the school: closing; failing to live up to its enrollment agreement; or, refusing to pay a court judgment.

To be eligible, the student must be a "California resident" and reside in California at the time the enrollment is signed or when the student receives lessons at a California mailing address from an approved institution offering correspondence instruction. A student temporarily residing in California for the sole purpose of pursuing an education, specifically one holding a student visa, is not considered a "California resident."

To qualify for STRF reimbursement you must file a STRF application within one year of receiving notice from the council that the school is closed. If you do not receive notice from the council you have four years from the date of closure to file a STRF application. If a judgment is obtained you must file a STRF application within 2 years of the final judgment.

It is important that you keep copies of the enrollment agreement, financial aid papers, receipts or any other information that documents the monies paid to the school. Questions regarding the STRF may be directed to: Bureau for Private Post-Secondary and Vocational Education, 1027 10th Street, Fourth Floor, Sacramento, CA 95814, (916) 445-3427.

UNIVERSITY OFFICERS

Shu-Park CHAN, Ph.	President
Yau-Gene CHAN, M.	Executive Vice President of Development
Gerald A. CORY, Jr., Ph.D.	Academic and Executive Vice President
Manisha PAI, B.A.	Vice President of Student Services
Mikel DUFFY, B.S.	Vice President of Development

Advisory Board

Prof. Hasan AL-KHATIB, Ph.D.,*(Chairman)*
President & CEO
IP Dynamics Inc.
Milpitas, CA

Special Advisor:

Dr. Wan Hee Kim
Special advisor to the President of Korea
"Father of the Korean Electronics Industry"

Prof.Diane DREHER, PH.D.
Department of English
Santa Clara, CA

Prof. Ho-Nien AU
Professor of Fine Arts
Chinese Culture University
Taipei, Taiwan, China

Prof. Nam LING, Ph.D.
Department of Computer
Engineering
Santa Clara University.
Santa Clara, CA

Prof. Gloria HOM. Ph.D.
Chair
Economics Department
Mission College,
Santa Clara

Prof. Mei-Yan Lu, Ph.D.
San Jose State University
University of Phoenix
San Jose, CA

Dr. Rodger Rickard
Founding VP
University of Phoenix
Formal CEO and Majority owner
Cornish & Carey Real

Mr. Ivan CHAN
Director. Head of foreign
exchange sales Asia
Credit Suisse Bank

Dr. T. Gary YIP, Ph.D.
President,
Excel Computers
Santa clara

Maya Chan
President and Executive Coach
Global Leader Associates

Shu – Kit Chan
CEO
Lei Gardens Group

Richard Chang
Hedge Fund Manager
Georgian Pine Investments

Eric Chen

Systems Design Engineer

Google

Domnik Schmidt

Director of RF Design Group,

Intel

Mark Kadrich

Jim Jorgensen

Chin Yao

Rob Chang

Yat – Pang Au

Kevin Liu

Helen Luo

Sandy Chou

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FACULTY

Frank Aguilera, D.P.A.
Adjunct Professor in Business Administration
D.P.A., Ageno School of Business, Golden Gate University, 2002;
M.S., Aeronautical Engineering, Naval Postgraduate School 1990;
BS Aeronautics, San Jose State University, 1975
Specialization: Project Management, Engineering Management, Research Methods, Industrial Engineering, Systems Engineering.

Barbara Arnoldussen
Instructor in Healthcare Management
M.B.A., San Jose State University, 1988;
Mental Health Rehabilitation Specialist (MHRS), Santa Clara County, 2009,
Certified Professional in Healthcare Quality (CPHQ), 1992;
RN and Public Health Nurse (PHN), California Board of Registered Nurses, 1969,
BSN, Marquette University, 1968
Specialization: Healthcare Accreditation, Quality Improvement, Wellness, Ambulatory Care, NCLEX Test Preparation

Alok Arora
Instructor in Healthcare Management
BDS, University of Mumbai, India
Certification - Cosmetic Dentistry, Bitein, Mumbai; Certification - HIV Care, UAB
Specialization: Good Clinical Practice

Srikar Boddu
Instructor in Multimedia
M.B.A., International Technological University 2008;
B.F.A Photography, Sri Venkateshwara College of Fine Arts 2005;
D.F.A Photography, JNTU College of Fine Arts 2002;
Specialization: Advertising, Fashion, Architectural, Food and Nature Photography.

Shu-Park Chan, Ph.D.
Professor of Electrical Engineering, Founder & President
Ph.D., Electrical Engineering University of Illinois Urbana, 1963;
M.S., Electrical Engineering, University of Illinois, Urbana, 1957;

B.S., Electrical Engineering, Virginia Military Institute, 1955
Specialization: Network Optimization, Graph Theory & Applications, and Computer Aided Analysis & Design

Yau-Gene Chan
Instructor in Multimedia, Executive Vice President
M.F.A., Acting, UCLA 1994;
B.A., Sociology, UC Berkeley, 1987
Specialization: Acting, Health Maintenance, Alignment & Movement, Communication, Digital Media Technologies

A. R. Chekeni, Ph.D.
Adjunct Professor in Business Administration
Ph.D., Education, Stanford University, 1986;
M.A. Counseling, University of San Francisco, 1989;
B.A., Business Administration, AIT, Iran, 1969.
Specialization: Areas of scholarship and teaching: Human Development and Education; Writing, Research, and Understanding; Culture and literacy.

Eric Chen, Ph.D.
Adjunct Professor in Software Engineering
Ph.D., Computer Science, University of Waterloo, 2009;
M.S., Computer Science, University of Waterloo, 2004;
B.S., Computer Science, University of Saskatchewan, 2002.
Specialization: Computational Geometry, Algorithms and Data Structures.

Gerald A. Cory, Jr. Ph.D.,
Professor in Business Management, Academic Vice President
Ph.D., Political Science, Stanford University, 1974;
M.A, East Asian Studies, Stanford University, 1972;
B.A, University of South Carolina, 1955
Specialization: Organizational Behavior, Microeconomics, International Business

Venkatesh Gopal, Ph.D.
Adjunct Professor in Healthcare Management
Ph.D. in Biotechnology,
M.S in Chemistry
Specialization: Modern Drug Discovery and Development, Regulatory Aspects of Drug Discovery, Cell Therapy and Emerging Technologies

Barbara Hecker, Ph.D.
Professor and Acting Head of Engineering Management
Ph.D., Computer Science, Nova Southeastern University;
M.S., Software Engineering, University of Maryland.
Specialization: Programming Software Development, Operating Systems.

May Huang, Ph.D.
Professor and Department Head of Electrical Engineering
Ph.D., Electrical Engineering, International Technological University;
MS in Electrical Engineering, Santa Clara University
Specialization: VLSI Design and Method, Artificial Intelligence

Nicole C. Jackson
Instructor in Business Administration
Ph.D Expected 2011, Policy, Organization, Measurement, and Evaluation, U.C. Berkeley;
M.S., Organization Studies and Management, Boston College, 2007;
M.B.A., Management, University of San Francisco, 2004;
B.A., History, U.C. Berkeley, 1995.
Specialization: Organizational Behavior, Human Resource Management, Organizational Transformation and Change, Creativity, and Innovation.

Kanakavalli Kannan
Instructor in SAP
M.C.A, Masters in Computer Applications, National Institure of Technology, Trichy India
B.S., Bachelors in Physics, Meenakshi College for Women, University of Madras, India
Specialization: SAP ABAP Programming; Materials Managements; Supplier Relationship Management; Supply Chain Management

JeongHee Kim, Ph.D.
Adjunct Professor in Electrical Engineering
Ph.D., Electrical Engineering, New Mexico State University; 2000;
MS, Electrical Engineering, West Coast University 1992;
B.S., Electrical Engineering, University of Kansas, 1990
Specialization: Digital signal processing, Communication and Control theory.

Heather Li, M.S.
Instructor in SAP
M.S., Computer Science, Temple University 1999

Specialization: Software engineering, SAP consulting and development

Liz Li, Ph.D.
Professor and Dean of Faculty
Ph.D., Software Engineering, Joint Program of Wuhan University and Keio
University;
M.S., Computer Science, Wuhan University;
B.S., Computer Science, Wuhan University;
Specialization: Artificial Intelligence, Software Engineering & Management,
Mobile Software

Qingning Li, Ph.D.
Adjunct Professor in Electrical Engineering
Ph.D., Physics, University of Utah, 1996;
M.S., Physics, University of Utah;
B.S., Optics, Zhongshan University
Specialization: NMR, ESR and MRI; Magnetism and Magnetic Field Modeling;
Magnetic recording physics and electronics; Electronics from DC to
Microwave; Optics, Laser and fiber, and optical communication; Semiconductor
physics and VLSI design; Digital Signal Processing and Image processing

Yu Li, Ph.D.
Adjunct Professor in Electrical Engineering
Ph.D., Electrical Engineering, Purdue University 2001;
M.S, Electrical Engineering, Purdue University, 1996;
B.S, Applied Physics, Peking University, 1992
Specialization: Semiconductor Device Theory, Device Modeling, Semiconductor
Processes, Wafer Testing

Peter Mo
Lecturer in Digital Arts
Specialization: Animation, Graphic Design, Photoshop.

Amal Mougharbel, Ph.D.
Professor and Department Head of Business Administration
Ph.D., Business Administration, Université de Corse, France, 2007;
MSBA, Business Administration, San Francisco State University, 1999;
BA, Education, Lebanese University, Lebanon, 1987;
Specialization: Accounting and Finance, Human Resources Management,
Strategic Management, French language

Barbara Olden, D.P.A.
Adjunct Professor in Business Administration
D.P.A., Public Administration, Golden Gate University, San Francisco, CA, 2003;
M.A., Educational Psychology, University of Arizona, Tucson, AZ, 1996;
B.S. Behavioral & Social Science, University of Maryland University College, College Park, MD, 1992
Specialization: Research Planning and Methodology, Qualitative & Quantitative Research Designs, Data Analysis and Interpretation, Correctional Theory and Practice

Manish Pai
Instructor in Business Management
Passed CPA exam, 2002;
ICWAI, India 1996;
C.S. (Inter) India 1997;
B.A., Accounting and Finance Pune University,1995.
Specialization: Financial and Management Accounting, Taxation.

Oscar Panes
Instructor in Computer Engineering
B.S., Clinical Science, San Francisco State University
Specialties: Networking and Communications

Amish Parashar
Instructor in Business Administration
M.S., University of London;
B.E., Thayer School of Engineering, Dartmouth College;
BA, Dartmouth College.
Specialization: Technology Entrepreneurship, Marketing, Operations, Engineering Design, Innovation Management.

Odie Pichappan
Instructor in Business Administration
M.B.A., Cornell University, 2008;
BS, Indian Institute of Technology Madras, 1994;
Specialization: Finance, Financial Accounting, Statistics and Economics.

Cornel Pokorny, Ph.D.
Professor and Department Head of Software Engineering
Ph.D., Computer Science, Technical University, Vienna, Austria, 1977;

M.S., Computer Science, Technical University, Vienna, Austria, 1973
Specialization: Objected Oriented Analysis & Design, Computer Graphics, and UNIX Operating Systems

Kumaran Rajaram
Instructor in Business Management
M.B.A., University -of Southern Queensland;
B.S. (Hons)-Mkt, University of Wales;
Postgraduate Diploma in Marketing, Chartered Institute in Marketing, U.K;
Graduate Diploma in Research Management, University of South Australia;
Postgraduate Certificate in Management, University of Southern Queensland;
Diploma in Electrical Engineering, Singapore Polytechnic;
Specialization: Leadership, Business Management, Marketing, Marketing Research, International Business, Organizational Behavior, Entrepreneurship and Strategic Management

Dominik Schmidt, Ph.D.
Adjunct Professor in Electrical Engineering
Ph.D., Major in Electrical Engineering, Minor in Aeronautical Engineering, Stanford University;
M.S., Management, Standard University,
M.S., Electrical Engineering, Stanford University;
B.S., EECS, University of California, Berkeley,
B.S., Material Science Engineering, University of California, Berkeley
Specialties: RFIC CMOS design, Mixed Signal Circuit Design, Memory Design, SoC Design, Bioelectronics

Mark Sierra
Instructor in Business Administration
M.B.A., San Jose State University;
B.S., San Jose State University Major in Finance, minor in Mathematics
Specialties: Planning and building business models; valuation; board meeting prep; strategic consulting and positioning; financial metrics/drivers; raising VC equity rounds; exit strategies; some M&A; Analysis

G. Hoffman Soto
Instructor in General Education
Register Movement Therapist
M. Ed., Somatic Education, Lesley College, Cambridge, Massachusetts 1989;
B.A., Movement Education, New College of California, San Francisco, California 1986

Specialization: Somatics, Experiential Anatomy, Health Maintenance, Body Movement.

T. G. Tsuei, Ph.D.
Adjunct Professor in Computer Engineering
Ph.D., Computer Engineering, Clarkson University;
M.S., Computer Engineering, Clarkson University
Specialization: Engineering Mathematics, Communications and Networking, IT Project Management

Seema Vaid, Ph.D.
Adjunct Professor in Business Administration
Ph.D., Finance, Banaras Hindu University, India, 1993
M.B.A., Finance, Banaras Hindu University, India, 1990
Bachelors in Commerce, Delhi University, India , 1988
Specialization: Finance, Accounting, Organization Theory and E-Business

Patricia Wiggin
Instructor in Business Administration
B.A., Business Administration, Minor English, Linfield College, McMinnville, OR
Specialization: Writing, Composition, Business Communication and Public Speaking

Min Wu, Ph.D.
Adjunct Professor in Software Engineering
Ph.D., Computer Science, MIT, 2006;
M.S., Computer Science, MIT, 2001
Specialization: Human-Computer Interaction; User Interface Design; Web Design; Usability and Security; Collaboration and Privacy; Computer and Internet Security; Web Browsing and Automation; Social Networking

Atsushi Yamazaki
Instructor in Business Administration
Visiting Fellow of Asia Pacific Research Center, Stanford; Sloan program of GSB, Stanford
B.S. Economics, Hokkaido University, Japan
Specialization: Technology, Business Process Development, Entrepreneurship International Marketing, Financial Planning

Henry Zhang, Ph.D.

Adjunct Professor in Electrical Engineering
Ph.D., Physics, University of Texas at Austin, 1989
Specialties: Logic/ASIC design and verification, computer/network architecture.
Non-vilotile memories.

Brian Zhao
Instructor in Electrical Engineering

M.S., Physics in Electrical Engineering, Purdue University 1986
Specialization: Semiconductor device, IC and system design and analysis