International Technological University

2006-2007

Bulletin

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.

International Technological University was approved by the State of California Bureau for Private Postsecondary and Vocational Education (BPPVE) to offer the programs listed in this catalog in accordance with the provisions of California Education Code(s) 94900 and 94915. ITU obtained its re-approval by BPPVE on January 1st, 2006, effective to December 31, 2009.

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International Technological University

Bulletin
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International Technological University
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A Message from the President

In our world 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.

Our thought processes must be informed by 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 that 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
October, 2005

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 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— are 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 graduate degree programs at the master level in Computer Engineering (CE), Electrical Engineering (EE), Software Engineering (SE), and a Master's of Business Administration in International Business Management (MBA). In addition, ITU offers a Bachelor of Science (BS) degree program in Computer Science (CS) and an additional option to focus on Multimedia Marketing & Performing Arts.

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. The special features of ITU include the following:

- Programs and courses at ITU are designed to support both full-time and part-time students.
- Courses are created at the speed of newly developing technological innovations and advances in the Silicon Valley.
- Courses are designed systematically, are competency-based, and utilize innovative instructional methods.
- Proficiency in public speaking and technical writing is an integral part of degree requirements.
- The curriculum emphasizes technologies and studies pertaining to environmental protection.
- A strong application component is integrated into the curriculum and often into each class.
- Special attention is given to practical engineering research problems.
- 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.

STATEMENT OF MISSION, PURPOSE, AND OBJECTIVES (CONT'D)

- The *ITU Consortium*--a group of industrial sponsors--contributes funds, sponsors student internships, provides research facilities, donates equipment, and supports joint research projects. ITU offers members of the consortium access to top-quality graduates, coordinates efforts to solve outstanding technological problems of concern to member companies, and serves as a forum for collaboration among member companies themselves.
- Through a special internship program, industrial firms, which are members of the ITU Consortium, will sponsor a full-time student for a period ranging between one semester and two years. The student will work as a half-time intern with the company on a project containing enough theoretical content to satisfy academic quality and at the same time having significant practical applications.
- An International Exchange Program of scholars from universities around the globe will be established. Such a program will be facilitated through industrial grants and grants from foundations such as the National Science Foundation, the Ford Foundation and the Fulbright Foundation, among others.

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.

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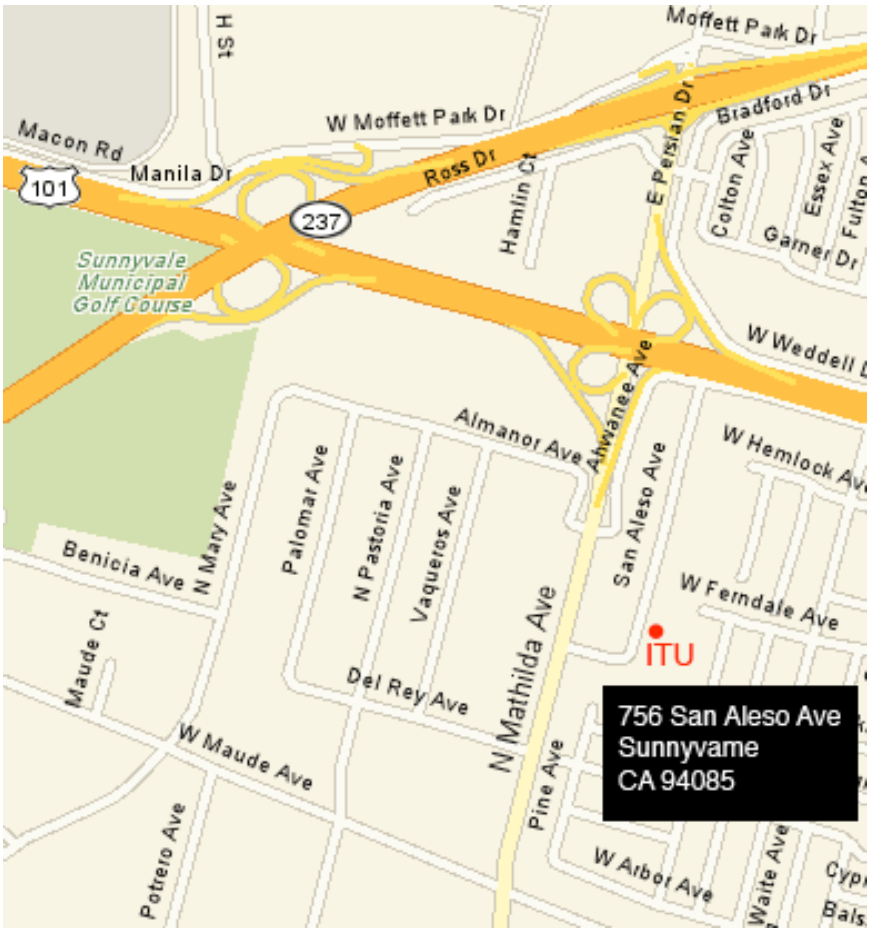
Map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Ross Dr
Bradford Dr
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Colton Ave
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Garner Dr
Sunnyvale Municipal Golf Course
W Weddell
Almanor Ave
Alvarado Ave
W Hemlock Ave
San Aleso Ave
N Mary Ave
Palomar Ave
N Pastoria Ave
Vaqueros Ave
Benicia Ave
W Ferndale Ave
ITU
Maude Ct
Del Rey Ave
N Mathilda Ave
W Maude Ave
Pine Ave
Potrero Ave
W Arbor Ave
Waite Ave
756 San Aleso Ave
Sunnyvame
CA 94085

Academic Calendar

Spring/2006 – Fall/2007

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

1. Students express interest to take an ITU course. This request is communicated to the ITU Registrar.
2. ITU Registrar notifies all students after minimum student enrollment numbers are reached.
3. Students coordinate with ITU Faculty to schedule class meetings.
4. 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 three 15 week terms scheduled throughout the academic year.

Spring Term 2006

(January 3 - April 15, 2006)

November 15, 2006 - January 3, 2006	Registration
January 3	Classes begin
January 15	Last day for Late Registration
January 25	Last day for withdrawing from classes
March 7 - March 25	Advanced Registration for Summer Term 2005
March 28	Last day to file for graduation this term
April 10 - 15	Final examinations
April 16 – April 30	Spring recess

Summer Term 2006

(May 1 – August 12, 2006)

March 27 - May 1	Registration
May 1	Classes begin
May 14	Last day for Late Registration
May 25	Last day for withdrawing from classes
June 30	Last day to file for graduation this term
July 4	School holiday
July 5 – August 15	Advanced Registration for Fall Term 2005
August 7 – August 12	Final examinations
August 13 – September 3	Summer recess

Fall Term 2006

(September 4 - December 17, 2006)

August 16 - September 4	Registration
September 4	Classes begin
September 18	Last day for Late Registration

September 26	Last day for withdrawing from classes
November 7 - November 26	Advanced registration for Spring Term 2006
November 17	Last day to file for graduation this term
November 24 - 25	School holidays
December 12 - 17	Final examinations
December 18 - January 1, 2007	Winter recess

Spring Term 2007
(January 2 - April 15, 2007)

November 15, 2006 - January 2, 2007	Registration
January 2	Classes begin
January 12	Last day for Late Registration
January 26	Last day for withdrawing from classes
March 5 - March 23	Advanced Registration for Summer Term 2005
March 30	Last day to file for graduation this term
April 9 - 15	Final examinations
April 16 – April 29	Spring recess

Summer Term 2007
(May 21st - September 2nd 2007)

April 7 - May 7	Pre-Registration(50% Off)
May 8 - May 21	Registration
May 21	Classes begin
June 4	Last Day For Late Registration
June 21	Last day for dropping courses
July 16 - August 15	Fall Pre-Registration
Aug 27 - Sep 2	Final Examinations
September 3, 2007	End of Summer semester

Fall Term 2007
(September 2 - December 21 2007)

July 16 - August 15	Pre - Registration
August 16 - Sept 3	Registration

Sept 3	Classes Begin
Sept 16	Last Day For Late Registration
October 2	Last Day for Dropping Courses
Dec 1 - Dec 31 2007	Winter Pre-Registration
Dec 17 - Dec 21	Final Examinations
Dec 21,2007	End of Fall Semester

Spring Term 2008
(January 20- May 16, 2008)

Dec 1 - Dec 30 2007	Pre - Registration
Dec 31 - Jan 21	Registration
Jan 21	Classes Begin
Feb 4	Last Day For Late Registration
Feb 17	Last Day For Dropping Courses
April 15 - May 15	Summer Pre - Registration
May 12 - May 18	Final Examinations
May 18 ,2008	End of Winter Semester

1. Admissions

Application for admission to ITU should be submitted using the Application Form available on the ITU website.
(http://www.itu.edu/applications.html)

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 213 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.

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

On-Demand Admissions:
Applicants taking advantage of ITU's convenient On-Demand course scheduling program may apply for admissions any time 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.

Bachelor's Degree

Admissions 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 award of ITU's Bachelor of Science degree requires the completion of at least 120 semester units. There shall be a minimum of 60 semester units or their equivalent within the student's chosen area of study; and a minimum of 36 semester units or their equivalent in general education courses.

General Education Requirements
The 36 semester units in general education may be in each of the following four areas:

1. Written/oral communications: 6 units
2. Reasoning skills (including mathematics and natural sciences): 12 units
3. Humanities/creative arts: 9 units
4. Social/political/behavioral sciences: 9 units

The following is an example of the stated requirements:

1. Composition, creative writing, advanced ESL;
2. Chemistry, general physics, critical thinking, logic biology, geology, calculus, drafting, astronomy;
3. Foreign languages, literature, philosophy, fine arts, ethnic studies, religion;
4. History, economics, political science, sociology, psychology, environmental studies, business law, organizational behavior.

College-level courses, which are not considered to be general education, may be transferred to ITU as general electives upon approval from the university Academic Committee. Relevant ITU elective courses may be counted towards general education upon approval of the Academic Committee.

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.

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 master's degree enrollment status are 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.

Transfer Credit

For Applicants for 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.

2. Financial Information

Tuition and Fees Per Trimester:

Application fee (domestic students) (one time fee, nonrefundable, sent with each application form)	$50.00
Application fee (international students) (one time fee, nonrefundable, submitting with each application)	$80.00
Tuition for all ITU International Students[1] (per unit in any major)	$550.00
Tuition for all ITU Domestic Students[2] listed below:	
Tuition for engineering graduates (per credit unit for all courses & thesis)	$425.00
Tuition for MBA graduates (per credit unit for all courses & thesis)	$380.00
Tuition for undergraduates (per credit unit for all courses)	$275.00
Registration fee[3]	$ 50.00
Early registration fee[3] (Trimester Scheduling only)	$ 25.00
Late registration fee[3] (Trimester Scheduling only)	$100.00
Student association membership (per term or equiv month)	$15.00
Computer Lab Fee	$15.00
Late payment fee	$20.00
Class Drop Fee	$20.00
Class Add Fee	$10.00
Fee for filing petition for incomplete grade	$ 50.00
Fee for course examination under *Challenge Test Option*	$100.00
Graduation fee (when filing for graduation request)	$100.00
Auditing fee (per graduate credit unit)	$350.00
Auditing fee (per undergraduate credit unit)	$250.00
Cooperative education fee (per graduate credit unit)	$425.00
Cooperative education fee (per undergraduate credit unit)	$275.00
Academic transcript fee (per copy)	$15.00
Returned check fee	$50.00

[1]The first semester's tuition for all ITU International Students is non-refundable from the date of registration or enrollment (which ever comes first).

[2]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 the following and ensuing semesters.

[3] Nonrefundable, regardless of the number of units registered.

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 2002, ITU offered 4 teaching assistantships, 3 research assistantships, 1 tuition waiver scholarship and 3 administrative assistantships. For fiscal year of 2003, ITU offered 4 teaching assistantships, 3 research assistantships, and 3 administrative assistantships. The number of such awards depends largely on the course offerings. Similar numbers are expected for fiscal years 2005 through 2007.

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 half-time (50%) appointment. For a half-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 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 Semester and either Spring 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, since students are expected to monitor their own progress in light of university policies.

To address 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 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, 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 withdrawl. 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 and students are responsible for the complete and accurate processing of their registration according to the guidelines published therein.

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 I 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. Certain records are excluded by law from inspection. 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
Major	Computer Science
Focus:	**Performance Art & Multimedia Marketing**
Specialization:	Digital Filmmaking, Animation, Game Design, Acting, Health Maintenance, Performance, Business Marketing, Digital Media Production

Master of Science (MS)

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

Master of Business Administration (MBA)

DegreeTitle:	Master of Business Administration in International Business Management
Major:	International Business Management
Specialization:	Finance, Management, Digital Media Marketing, Digital Media Production, Hi-tech Entrepreneurship

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.

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

Curriculum

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

For BSCS Multimedia Focus:

- 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.

General Requirements for the Master's Degrees

MS Requirements

A cumulative grade point average of at least 3.00 out of 4.00 is required for course work applicable toward a graduate degree. Credit toward a graduate degree is only given for courses in which a student received a grade of A, B, C with plus (+) and minus (–) variations and P.

General requirements for the Master of Science (MS) degree in Electrical Engineering (EE), Computer Engineering (CE), or Software Engineering (CS) are as follows:

1. Satisfy the MS degree program admission requirements;
2. Complete 3 credit hours of Joint Seminar;
3. Complete a residency requirement of 27 credit hours;
4. Successfully complete a total of 36 minimum credit hours;
5. Satisfy specific course requirements of individual programs;
6. Complete the *Thesis Option** or the *Course Option***.

MBA Requirements

A cumulative grade point average of at least 3.00 out of 4.00 is required for course work applicable toward a graduate degree. Credit toward a graduate degree is only given for courses in which a student received a grade of A, B, C with plus (+) and minus (–) variations and P.

Specific requirements for the MBA degree are as follows:

1. Satisfy the MBA degree program admission requirements;
2. Complete 3 credit hours of Joint Seminar;
3. Complete a residency requirement of 27 credit hours;
4. Successfully complete a total of 36 minimum credit hours;
5. Satisfy specific course requirements of individual programs;
6. Complete the *Thesis Option** or the *Course Option***.

**Thesis Option:* The student completes 33 credit hours of course work, and presents and defends a thesis before a committee. Upon committee approval, the student receives at least 3 credit hours but no more than 6 credit hours for the thesis.

***Course Option:* The student completes 36 credit hours of course work with the approval of his/her faculty advisor. The option is intended primarily for those who will not continue their studies for the doctoral degree.

Masters of Science in Computer Engineering

The Computer Engineering degree program currently focuses in three major areas: *IT Security, Networking and Digital Systems*, leading to Master of Science in Computer Engineering (MSCE). Its purpose is to prepare students for career in education and research and development in industry.

MSCE Requirements

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, including:

- 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 597

Masters of Science in Electrical Engineering

The Electrical Engineering degree program currently focuses in three major areas: *Digital Signal Processing*, *Communications*, *Circuits and Systems*, and *VLSI Design*, 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.

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:

- 6 credit hours in electrical engineering: CEN 910, 911, 933, 910, 911 and EEN 903 or other approved courses
- 3 credit hours in applied mathematics selected from the following: AMN 910, 912, 930, 952, 920 and 920 or other approved courses
- 3 credit hours in joint seminars: GRN 597
- 24 credit hours of electives, project or thesis upon the approval of the advisor: For specialization in VLSI or digital signal processing, select courses from the following: EEN 915, 918, 964, CEN 952, and SEN 909, or other approved courses. For specialization in wireless communication or communications, select courses from the following: *EEN 963*, *942* and *SEN 909* 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.

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

Master of Business Administration

THE MASTER OF BUSINESS ADMINISTRATION (MBA) Program provides its students a solid foundation in international trade & management, marketing, finance, economics, entrepreneurship and digital media marketing & production that will be as valuable ten years from now as it is today. The University's location in the heart of Silicon Valley provides its MBA students with exposure to the unique entrepreneurial success in this region. The MBA faculty has many years of experience in starting companies, managing corporations, directing advanced product development, and consulting for major companies.

Its goal is to prepare the students for successful international careers. ITU is particularly unique in its focus on the study of business in Pacific Rim countries in general and China in particular. Many of its graduates are expected to become leaders of emerging as well as established international companies. Because of its academic discipline, the Program will give students the conceptual background needed to meet the challenges of the 21st century.

MBA Requirements:

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, ECON 920, FINN 931, MGTN 943, MGTN 949 and MKTN 953 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 Accounting, Multimedia Marketing, Management, Finance, Economics, Acting, IT Security and Decision Information Sciences course offerings or other approved offerings.

General Academic Policy

Specific requirements for any academic degree program may be modified on a case by case basis with the approval of the ITU Academic Committee.

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), MGTN (management), and MKTN (marketing). In general, the undergraduate courses are assigned the course numbers at the 100, 200, 300 and 400 level. Most all of these courses are 3 credit units. The graduate courses are assigned the course numbers at the 500, 600, 700, 800 & 900 level. 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. 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 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 multi-variable 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, eigenvalues 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, Eigenfunction 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 930 Numerical Analysis (3 credit hours)
Numerical solution of linear system of equations by direct method and iterative method, numerical least square problem, eigenvalue 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 combinatorics and discrete probabilities analysis and statistical quality control.
Prerequisite: AMN340

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 920 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 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: Tabu 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 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 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, micro-programming 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, iostream library. Not covered are exception-handling, templates, STL, and iterators.
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 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 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, 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 910 Digital Design I (3 credit hours)
This course is the same as CSN 410, and meets 3 hours per week for 16 weeks.
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

CEN 911 VLSI Design I (3 credit hours)
MOS & CMOS circuits and transistor theory, VLSI technology, circuit characterization and performance analysis, static and dynamic CMOS logic circuits, different logic structures, and system and subsystem design.
Prerequisite: CEN 510

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 951 Computer Architecture I (3 credit hours)
Instruction set design, processing unit, control unit, micro-programming, memory, and input/output subsystem.
Prerequisite: None

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 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 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, crosspoint-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 966 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

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 975 High Speed Digital Systems (3 credit hours)
As technology continues to advance, issue of signaling, timing, power and noise become increasingly important. Thus, the techniques covered in this class, once used only in supercomputers before, are now essential to the correct and efficient operation of any type of digital system. This class is planning to cover the practical and theoretical aspects necessary to design modern high-speed digital systems at the platform level. The class will go through every required fundamental concept, basic theory and as many as related other topics. Topics covered are: Fundamentals, transmission line, cross talk and terminations, connectors, packages, and vias, nonideal return paths, SSN (Simultaneous Switching Noise), power system/ delivery, buffer modeling, clock distribution and clock oscillators. Digital timing analysis, design methodologies, and measurement techniques.
Prerequisite: CEN 910

CEN 910 Digital Design II (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.
Prerequisite: CEN 910

CEN 911 VLSI Design II (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 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 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 952 Digital Design with Verilog HDL (3 credit hours)
Hardware description language, algorithmic approach to digital design, design specification, synthesis, design with gate arrays, simulation of digital design, and CAD tools and lab.
Prerequisite: CEN 951

CEN 960 Computer Networks: Internetworking with 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 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

Electrical Engineering

EEN 903 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.
Prerequisite: A course in college physics

EEN 915 Semiconductor Devices (I) (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.
Prerequisite: EEN 922

EEN 918 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: None

EEN919 CMOS Memory Circuit Design (3 credit hours)
This course teaches CMOS memory building block circuits design as well as memory system design. Topics covers memory cell of SRAM,

DRAM, FLASH, MRAM etc, and sense amplifier, address decoder, and other memory peripheral circuits, such as voltage regulator, charge pump and bootstrap circuits and techniques. Topics also cover different SRAM architectures such as synchronous and asynchronous etc. Memory systems including DRAM, FLASH and MRAM are also introduced. The course includes a project of design of a SRAM system.
Prerequisite: None

EEN 920 Introduction to Semi-Custom IC Design (3 credit hours)
Semi-custom IC has become a dominant driving force in IC industry. It ranges from high volume ASIC to programmable devices, such as FPGA (Field Programmable Gate Array) and PLD (programmable logic device). This course provides an introductory study of this fasting growing area of IC fields. It also offers students valuable exposure by working on few mini hands-on projects using modern EDA tools and devices. The main topics include: 1) introduction of ASIC, FPGA and PLD from system point of view, 2) semi-custom IC technologies and architectures, 3) trade-off of the various technologies, 4) semi-custom IC design flow, 5) introduction of modern EDA tools, 6) techniques in HDL design, synthesis, circuit analysis and testing, 7) projects based on modern programmable devices. 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: CEN910

EEN 922 Semiconductor Physics (I) (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 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.
Prerequisite: EEN 922 or EEN 923

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 967 Analog Integrated System Design (3 credit hours)

The class is planning to cover the practical and theoretical aspects necessary to design modern CMOS analog integrated circuit. The class will go through every required fundamental concept, basic theory and as many as related other topics. As technology continues to advance and integrated circuit becomes more complex, it is crucial to know "how the circuit works." Thus, the techniques covered in this class will teach the student to learn to analyze the circuit and will set forth procedures that will help the student come up with working design.

Prerequisite: None

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: EEN967

EEN 910 Semiconductor Devices (II) (3 credit hours)

Extension of Semiconductor Device (I). An in-depth review of semiconductor device structures with focus on modern advanced short channel CMOS, device scaling, optimum design, high field effect, reliability quantum effects, process and modeling, etc as related to the forefront of modern semiconductor industry.

Prerequisite: EEN915

EEN 919 Integrated Circuit Fabrication Processes (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, metalization, wafer testing, formation of various devices, manufacturing technology and packaging; design, hardware, software control and process engineering aspect of semiconductor fabrication equipment.

Prerequisite: A course in college physics

EEN 920 Nanotechnology I (3 credit hours)
Nanotechnology plays a vital role in the 21st Century. Nanoparticles and nanostructures represent a scale of matter where radically different phenomena are manifested. The unique mechanical, electronic, magnetic, optical, chemical properties open the door to an enormous new domain of engineered nanostructures and integrated nanodevices, with unimaginable applications in every aspect of life. Students also learn the context of nanomanufacturing: fabrication, analysis and synthesis processes, instrumentation for characterization, and integration of nanodevices and systems.
Prerequisite: EEN922

EEN 921 Nanotechnology II: Spintronics (3 credit hours)
The spin-based electronics so-called spintronics is likely to impact our lives in ways reminiscent of the early days of the transistor and microelectronics industry. Unlike current microelectronics devices, spintronics devices utilize both carrier spin and charge to carry or store information. Spin is a purely quantum phenomenon which lends itself elegantly to the logic "one" and "zero". Students learn the fascinating device physics of GMR sensor, MRAM, spin transistor, nanoscale magnetic logic gate. The course also covers the practical knowledge of fabrication, analysis and synthesis processes, instrumentation for characterization, and integration of nanodevices.
Prerequisite: EEN 920

EEN 923 Semiconductor Physics (II) (3 credit hours)
This advanced course in semiconductor physics is designed for students to gain advanced theory and knowledge in modern semiconductor devices and manufacturing, nano-processing and devices. It covers topics in transport phenomena in semiconductors, lattice vibrations and phonons, scattering processes, excitons, optical properties, electroabsorption, magnetoabsorption and heterostructures.
Prerequisite: EEN622

EEN 942 Digital Control (3 credit hours)
Frequency, Nyquist stability, relative 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.
Prerequisite: AMN 920

EEN 950 Quantum Devices II (3 credit hours)
This course is a continuation of EEN 550 Quantum Devices I. Topics includes quantum transport, quantum interference, quantum noise, transport and optical properties of low dimensional semiconductor devices, quantum optical devices, high electron mobility transistors, single electron transistors, super conducting devices, and quantum transport in Mesoscopic structures.
Prerequisite: EEN950

EEN 960 Quantum Transport in Semiconductor Nanostructures (3 credit hours)
In modern nano-sized quantum structures, the feature size is smaller than the electron mean free path and various new phenomena are observed in the electron transport at low temperatures, such as conductance quantization, universal conductance fluctuation, etc. These new phenomena have provided challenging topics from the point of view of fundamental physics, and various quantum-effect devices. Through understanding basic

physics of quantum structures, pursuing their controllability, proposing new devices and also developing new technologies to fabricate atomically-controlled structures. Topics to be covered are: Mesoscopic Systems, Transport in Quantum Structures, Transport Properties in Nanostructures, Magnetotransport Properties of Quantum Films and Quantum Hall Effect, Electronic Phase Coherence and Transport in Quantum Dots and Quantum Rings, Nonequilibrium Transport & Nano Devices.
Prerequisite: EEN950

EEN970 Quantum Computation (3 Credit Hours)
Quantum Computing promises to solve problems that are intractable on digital computers. Quantum Algorithms can decrease the computational effort for some problems by many orders of magnitude that can be achieved by using superposition of entangled states. Three main problems must be solved to build a working quantum computer, i.e., utilization of entangled states, creation of quantum databases and implementation of quantum computation algorithms. The following topics will be covered in this course: Linear vector spaces in quantum mechanics, quantum bit, single-qubit gates, controlled gates and entanglement generation, quantum logic gates and adder, quantum search, quantum Fourier Transformation, quantum phase estimation, quantum cryptography, quantum teleportation and quantum error correction.
Prerequisite: EEN810, EEN860

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 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 electrical engineering, prepare a thesis, and defend it before a committee composed of a number of faculty designated by department chair.
Prerequisite: Graduate standing

Software Engineering

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

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 951 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.

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 964 Java Programming (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 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 980 Database Systems I (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 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 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 990 Introduction to Compiler Design I (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 992 Computer Graphics I (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 Intrinsics, widget sets (Athena, Motif) and widget creation. Window managers, inter Xclient communication, resource specification.

Prerequisites: CSN 881 and SEN 956

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 Visual C++ Programming (3 credit hours)

GUI programming with Visual C++, Microsoft foundation classes, events, buttons, menus, canvas.

Prerequisite: SEN 909

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

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

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 965 Advanced Internet Technologies (3 credit hours)
This class teaches the major technologies of the Internet. Among them are HTML, PERL, Internet protocols, and client-server programming. The first part of the class is an accelerated study of PERL. The second part of the class is a study of HTML, Internet protocols, and client-server programming. The student shall use PERL to write the client or the server in several projects. A possible project is writing a server supporting multiple clients which require the persistence of state (at the server) across multiple transactions. Easier projects may involve writing the CGI scripts for a Web server like Apache. This class is programming-oriented and project-oriented, so a prospective student must want to write programs. The only prerequisite for this course is being able to write moderately complex computer programs.
Prerequisites: SEN 909 or SEN 964

SEN 980 XML Databases and Applications (3 credit hours)
XML (e**X**tensible **M**arkup **L**anguage) is a markup language for describing the content and structure of data and is becoming the "de facto" standard for data exchange. A large amount of information is available on the Web in HTML format, but the data is not particularly suitable for research purposes because the structure (or the meta-content) of the data cannot easily be retrieved. XML provides rich facilities to

describe not only the content but also the meta-content of data. In fields like Bioinformatics, where large amounts of data from multiple resources and various data formats have to be accessed and integrated, XML provides the format and flexibility to define domain-specific tags and validation mechanisms. This course covers three important aspects: a) a study of existing XML technologies and tools, b) converting existing databases and data formats into XML and c) designing new database systems to support XML data.
Prerequisite: CSN 878 or SEN 980

SEN 996 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

Master of Business Administration

ACTN - Accounting

ACTN 900 Financial Accounting (3 credit hours)
The course is intended to develop students' ability to understand and use financial statements. It is oriented toward the use of financial accounting data. It places an emphasis upon the reconstruction of economic events from accounting reports.
Prerequisite: Graduate standing

ACTN 910 Cost Accounting (3 credit hours)
The course focuses on the preparation and use of cost and other data for management planning, decision-making, and control. It emphasizes the diverse contexts (for example, product cost, pricing, and performance evaluating) in which manager's use accounting information.
Prerequisite: ACTN 500

ACTN 920 Federal Personal Income Taxation (3 credit hours)
The federal income taxation of individuals. The concept of income, exclusions from income, personal and business deductions, sales and exchanges of property, when income is taxable, and to whom it is taxable. A course based on the provisions of the Internal Revenue Code and judicial and administrative interpretations.
Prerequisite: None

ACTN 930 Federal Corporate Taxation (3 credit hours)
The federal income taxation of corporation. The concept of contribution, formation, distribution, stock dividends, liquidation, acquisition, reorganization, affiliated. A course based on the provisions of the Internal Revenue Code and judicial and administrative interpretations.
Prerequisite: ACTN 520

ACTN 940 Federal Partnership Taxation (3 credit hours)
The federal income taxation of partnership. The concept of contribution, formation, distribution, operation of a partnership, allocation, sales of partnership interest, termination, death of a partner, anti-abuse regulation. A course based on the previsions of the Internal Revenue Code and judicial and administrative interpretations.
Prerequisite: ACTN 520

ECON - Economics

ECON 920 Macroeconomic Theory (3 credit hours)
This course analyzes what determines the level and rate of growth of output income, employment and prices, interest, and foreign exchange rates. Prepares decision-makers to understand how an economy functions in the aggregate, how to interpret, analyze, and operate within a changing macroeconomic environment.
Prerequisite: Graduate standing

ECON 921 Microeconomics for Business Decisions (3 credit hours)

This course will provide a comprehensive coverage of basic microeconomic principles and how they affect business decisions and practice. It will include analysis of the fundamental concepts of supply and demand, cost, production, and pricing. It will explore the importance of institutional economics and the place of the market in the overall society. It will introduce new concepts in economic and business theory that are recently emergent with the 21st century. Especially it will examine emerging dual motive theory and its importance for the functioning of free market dynamics in the domestic as well as the global eco-nomy. Emphasis will be placed on applications as well as theory.
Prerequisite: Graduate standing

DISN - Decision and Information Sciences

DISN 934 Database Management Systems (3 credit hours)
A hands-on approach to the design and use of relational databases for business applications. Study of query languages and application generation. Use of database software is a necessity in current business environments.
Prerequisite: Graduate standing

DISN 935 Software Development Process Management (3 credit hours)
Successful software projects need to deal with people and economic considerations, as well as technical considerations. The learning objectives of this course are to enable students to understand the software development process at both the project and organization levels; to analyze software cost/schedule tradeoff issues via software cost estimation tools and microeconomic techniques via case studies; and to apply the principles and techniques to practical situations. Detailed topics include economies of scale, present value, constrained optimization, statistical decision theory, software risk management, people considerations: motivation, win conditions, leadership, team building and group dynamics.
Prerequisite: None

DISN 937 Management Information Systems (3 credit hours)
Conceptual background, structures, and use of computer-based information systems. Detailed coverage of the theory and practice of information systems. Data processing technology and its applications, systems concepts, systems analysis and evaluation, and managerial and technological considerations of information systems. Examining systems for intra- and inter-organizational transactions, coordination, and control.
Prerequisite: Graduate standing

DISN 950 e-Commerce Security (3 credit hours)
e-commerce security covers key subjects such as: e-commerce security overview, threat of data & communication security, security tools overview, security strategies and implementation. The students will learn Internet e-commerce security fundamentals. Student will gain knowledge of general security requirements and implementation for secured networking and e-commerce.
Prerequisite: Graduate standing

FINN - Finance

FINN 930 Investment Management (3 credit hours)

The course discusses the foundations of investment management. Necessary tools of analysis to evaluate investment opportunities and the conceptual factors influence the value of companies--both publicly listed and private equities. The focus includes quoted and private equity investments and entrepreneurial finance.
Prerequisite: Graduate standing

FINN 931 International Financial Management (3 credit hours)
This course provides students with the history of international financial systems and a framework for making corporate financial decisions in an international context. Topic areas include: how to measure currency exposure; financial and operational means to manage currency risk; the decision to undertake a global financing program; exchange and capital market. Capital budgeting analysis for foreign direct investment; strategic considerations in the globalization process; and how to value target firms for cross-border acquisitions.
Prerequisite: Graduate standing

FINN 932 Corporate Finance (3 credit hours)
This course addresses the principles underlying alternative financial arrangements to business financial management. Capital budgeting; minimum rates of return for capital investments; capital structure; financial analysis and planning; short, intermediate, and long-term financing; and the market for corporate control.
Prerequisite: Graduate standing

FINN 934 Financial Analysis and Corporate Policy (3 credit hours)
An in-depth study of selected topics in finance, including ratio analyses, capital structure and leverage, working capital management, reorganization and bankruptcy. Real world business cases will be used in the classroom discussion, The case study will also add some flavor of "the practical approach" to the MBA program format including several Harvard Business School cases study.
Prerequisite: FINN930

FINN 935 Derivatives and Risk Management (3 credit hours)
To develop a sound knowledge of option theory and a better understanding of the basic function of derivatives in risk management, theoretical and practical applications in derivatives. Topics included: forwards; futures; swaps; options; hedging strategies; the random walk (Brownian motion) model of stock prices; the Black-Scholes analytical model and the binomial models. Financial risk management techniques are emphasized.
Prerequisite: None

MGTN – Management

MGTN 930 Operations Management (3 credit hours)
This course is designed to provide both a theoretical and practical background in strategic thinking and management. Strategic operations management concerns the overall direction of an enterprise, especially in the Global environment. Will analyze case studies that reveal the real challenges of management. The course will develop alertness and sharpen judgment in business matters critical to fast moving high tech entrepreneurial environment.

Prerequisite: Graduate standing

MGTN 940 Human Resource Management (3 credit hours)
This course provides a framework for understanding and thinking strategically about the management of human resources in organizations. Specific topics include: recruitment and selection; compensation and benefits; promotion; training; performance appraisal; retention and turnover; and selected public policy issues pertaining to employment (e.g. discrimination and affirmative action).
Prerequisite: Graduate standing

MGTN 941 Entrepreneurship and Venture Capital (3 credit hours)
Many of America's most successful entrepreneurial companies have been substantially influenced by professional managed venture capital. This relationship is examined from both the entrepreneur's and the venture capitalist's perspective. The course explores entrepreneurship with emphasis on forming and operating new business ventures. It covers crucial aspects of investigating new business opportunities.
Prerequisite: MGTN 943

MGTN 943 High-Technology Entrepreneurship (3 credit hours)
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 945 International Management (3 credit hours)
The course examines managerial behavior within a cross-cultural environment. It analyzes problems confronting managers in international operations, the impact of international forces on a firm's future, establishing and conducting international transactions. Blend of conceptual material and case analyses.
Prerequisite: Graduate standing

MGTN 948 Project Management (3 credit hours)
This course offers a study of project management history, maturity, culture, methodologies, processes, leadership and strategic planning. It briefly traces the development of project management, then discuss the 5 processes that must be done for project success: Define, Organize, Execute, Control and Close. It studies the best methods and processes of project management that assure success within these 5 processes. The strategic implications of projects will be studied with respect to their 'fit' with the organizational vision.
Prerequisite: Graduate standing

MGTN 949 Organizational Theory (3 credit hours)
The course offers a survey of behavior in and of organizations. It covers issues of individual behavior, interpersonal communication and influence, group dynamics, intergroup relations, complex organizational structure and behavior, and relations between organizations and environments. The course addresses the ways in

which organizations and their members affect one another. Issues of motivation, task design, leadership, communication, organizational design, and innovation will be analyzed.
Prerequisite: Graduate standing

MGTN 951 Business Communications (3 credit hours)
Communication is an essential component in every management task. One objective of this course is to provide a framework with which 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 922 Quality Management (3 credit hours)
This course focuses on a systematic approach to the understanding of the strategic importance of effective quality management. The course provides a basis for systems approach to teamwork. Process analysis for continuous improvement and quality control. The use of management tools to measure and improve a system or process in an organization. The responsibility of the leaders in various levels in an organization, including managers and team leaders. Application of computer models.
Prerequisite: Graduate standing

MGTN 953 Business Law (3 credit hours)
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 955 Vendor Management (3 credit hours)
In the current market where organizational leaders have an obligation to reduce cost, outsourcing is a valuable option. Finding the right vendor to fulfill the needs of organizations is still a challenge. This course provides knowledge and skills that impact the bottom line of organizations. Win-Win Vendor Management and Outsourcing with growing complexity of products and services requires analysis beyond the traditional level. In this course students will learn all aspects of outsourcing, including planning, finding the right vendor and negotiating effectively. Relationship building, creating a culture of cooperation, and avoiding common mistakes when deal with vendor are among the skills that students will learn.
Prerequisite: None

MKTN – Marketing

MKTN 951 Competitive Marketing Strategies (3 credit hours)
Strategy development through intensive analysis of a diverse selection of cases from consumer, industrial, and technological markets; product and service businesses; and for-profit and nonprofit sectors. Students will build a marketing plan as one of the course requirements.
Prerequisite: MKTN 553

MKTN 953 International Marketing (3 credit hours)

Systematic treatment of marketing on a global scale. Topics include the analysis of global market environments, targeting and entry strategies for global markets, sourcing and global production strategy, the global marketing mix, and managing the global marketing effort. The perspective of the course is managerial. Its purpose is to prepare the student to lead the organization to penetrate global opportunities successfully as well as meet global threats in domestic markets.
Prerequisite: Graduate standing

MKTN 954 Sales Management (3 credit hours)
This course is offered for technical and business professionals who want to learn the buying and selling processes that corporations use in business-to-business transactions. Emphasis is on the concept of solution selling, improving value, and meeting the needs of clients through effective questioning, analysis, sales planning and presentations. Students learn the major phases of the value added sales process, setting sales objectives for each phase, analyzing client needs, designing a value-added sales approach, presenting solutions, and handling objections.
Prerequisite: Graduate standing

MKTN 958 Marketing Management (3 credit hours)
This course analyzes the substantive and procedural aspects of marketing management, and sharpens skills for critical analytical thinking and effective communication. Emphasis will be placed on marketing strategy and the elements of marketing: customer analysis, competitor analysis, and company analysis. Product strategy, pricing, advertising and promotion, and distribution will be addressed. Students will be provided with a forum for presenting and defending their own recommendations, and for critically discussing the recommendations of others.
Prerequisite: Graduate standing

MKTN 961 e-Commerce (3 credit hours)
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

MBAN 996 Case and Independent Study (3 credit hours)
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 998 MBA Project (3 or 6 credit hours)
By arrangement with project advisor. A nominal number of 2 or 4 credit hours is expected toward to MBA 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 Master's Thesis (6 credit hours)

By arrangement with thesis advisor. A nominal number of 6 credit hours is expected toward the MBA degree if the Thesis Option is selected. Conduct independent research of an approved topic in business administration, prepare a thesis, and defend it before a committee composed of a number of faculty designated by department chair.

Prerequisite: Graduate standing

General Requirements

GRN 311 Verbal Communications and Conversations (3 credit hours)
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 313 Newspaper Reading and Essay Writing (3 credit hours)
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 314 Active Listening (3 credit hours)
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 399 Writing and Composition (3 credit hours)
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 401 Consilience I (3 credit hours)
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

GRN 402 Consilience II (3 credit hours)
This course continues the exploration of leading edge scientific findings and thinking leading to the unification of science. It explores the relationships and linkages among physics, biology, neuroscience, anthropology, sociology, economics, and political science.
Prerequisite: None. Required of all undergraduates

GRN 497 Joint Seminars (1 – 3 credit hours)
Invited seminar speakers on subjects of general interest.
Prerequisite: None

GRN 901 Technical Writing and Public Speaking (3 credit hours)
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 920 Internship (3 credit hours)
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

GRN 997 Joint Seminars (1 – 3 credit hours)
Invited seminar speakers on subjects of general interest.
Prerequisite: None

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 minute 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 world-wide 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 ne*ws 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. _

Wiley Interscience _Covers sciences, business, law and education. _

Computer Labs

Computer facilities include a 10 station lab and full T-1 wireless Internet connections. The labs are open from 1:00 PM 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 classwork.

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.

The Bureau of Citizenship and Immigration Services dictates that a nonimmigrant alien student must enroll as a full-time student at the university issuing the supporting document. In order to ensure that this policy is observed, a prospective student is required to make a deposit of USD $500. This deposit will be deducted from the student's tuition fees upon registration.

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.

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