California South Bay University

CATALOG 2009 - 2010

762 San Aleso, Sunnyvale, CA 94085
Tel: (408) 400-9008 (Admission); Fax: (888) 225-1868
Website: www.csbu.us; Email: info@csbu.us

This publication is an announcement of the current programs and course offerings provided by California South Bay University. It is for information only and is subject to change without notice. Courses, faculty assignments, prerequisites, graduation or completion requirements, standards, tuition and fees, and programs may change from time to time. The same courses are not necessarily offered every term.

California South Bay University reserves the rights to change requirements regarding admission, the courses and their contents, the organization of curricula, retention, awarding of degrees, and other necessary rules and regulations. Such regulations shall be effective whenever determined by the appropriate faculty and administrative bodies; they may govern both old and new students.

Every effort, however, has been made to assure that all regulations and curriculum information contained in this *Catalog* are correctly updated as of January 10th, 2009

Contents

A Message from the President

Welcome to the California South Bay University! As we begin the twenty-first century, education is undergoing great changes, merging with the Information Superhighway. Innovations in technology and communications have enabled the educational sector to expand its realm in providing education to a wider range of students in extensive geographic areas.

The California South Bay University is dedicated to utilizing the latest technologies in its efforts to bring the best possible education to students all over the world. We seek to challenge our students, and, in doing so, provide them with the services and opportunities necessary to enable them to successfully complete their respective degree programs.

Located in the very heart of Silicon Valley, California South Bay University is able to attract some of the best talents worldwide to pass on their knowledge and experience to the next generation. Also, Sunnyvale is close to the famous California beaches and noted for the great weather, ethnic diversity and friendly atmosphere.

I would like to invite you to invest your academic future and professional success by exploring the opportunities available at the CSBU and wish you have a great studying experience at California South Bay University**.**

California South Bay University

President, Dr. Mike, Mao

INSTITUTIONAL PHILOSOPHY

Welcome to California South Bay University! California South Bay University is a pioneer in offering quality academic programs with flexible course schedules designed to meet the needs of working adults. Also, we are committed to providing a challenging and exciting intellectual environment in which adult learners can reach their full potential and achieve their educational goals.

At CSBU, we pride ourselves both on the quality of our education and its relevance to today's professional world; especially in biotech management. Each program within the university is designed to ensure that all of the acquired knowledge and skills be valuable to its graduates, offering a practical and solid foundation for the students' future. We make sure that our educational training would help enhance students' basic knowledge, skills, critical thinking, and problem-solving ability in order to bring them closer to accomplishing their professional goals.

In addition to enriching students' capability of developing their own career, CSBU embraces the notion of innovation and is dedicated to capture the newest trend of technology and industries. Students are encouraged to be creative in learning advanced knowledge and to bring such a spirit into their life. We believe once students internalize the spirit of innovation through participating in our learning community, it will become their life-long assets.

With our passion to provide excellent education to people who love to learn, we sincerely invite you to join us in our many professional programs in the fields of computer science, management, and healthcare. A wise decision today, translates to a bright future tomorrow.
California South Bay University

STATEMENT OF MISSION, PURPOSE AND OBJECTIVES

California South Bay University is a learning community that seeks to serve society by educating the leaders of tomorrow and extending the frontiers of knowledge.

The mission of California South Bay University is to provide a synthesis of innovative and traditional education leading to outstanding professional opportunities for adult learners. California South Bay University aims to bring qualified faculty who have had active careers in high-tech industries and business into interacting with highly motivated students in a stimulating learning environment. With the fast-changing global business and technological industries, California South Bay University adapts its curricula to those needs. Presently, California South Bay University focuses on graduate degree programs at the master level in Computer Science (MSCS), Electrical Engineering (MSEE), Biotech Management (MBTM), Business Administration (M.B.A), Health Care Management (MHCM), Green Energy (MSGE), English as Second Language.
Our educational goal is to give the student a solid background in general studies as well as specialized knowledge in a chosen field. Although we realize the necessity of offering the student a large portion of basic information, we believe that our primary task is to teach the student not only concepts but the process of

discovery, analysis, and application of these concepts.

At California South Bay University, education encompasses continuous striving for excellence with the contexts to learning so that knowledge is gained not only for its own sake, but for the sake of modern society which the people for California South Bay University are a part of.

- Programs and courses at CSBU are designed to support both full-time and part-time students.
- Courses are created in accordance with the speed of newly developed technological innovations and advances in the Silicon Valley.
- Courses are designed on a competency-based, and are taught using 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 CSBU.
- The CSBU Consortium--a group of industrial sponsors--contributes funds, sponsors student internships, provides research facilities, donates equipment, and supports joint research projects. CSBU 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 CSBU 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. In addition, the project usually has 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 CSBU

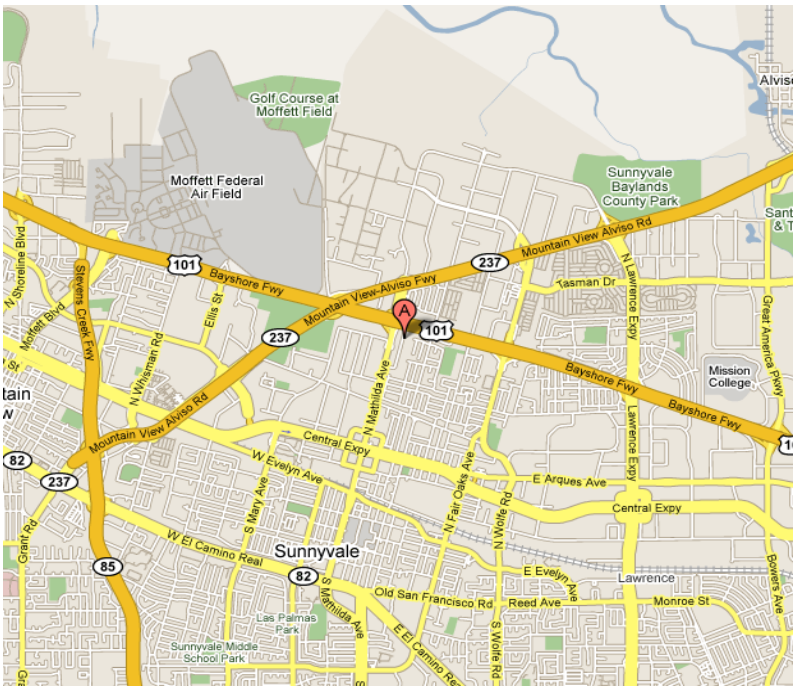
California South Bay University provides a unique educational culture and learning environment for students because California South Bay University has recruited a strong pool of talented individuals from Silicon Valley to teach, conduct research, and provide students services.

UNIVERSITY LOCATION

California South Bay University is located in the heart of Silicon Valley, just 50 miles south of San Francisco and is in the center of the world's greatest concentration of hi-tech, professional and scientific activity- Silicon Valley. There are many firms around a five mile radius of CSBU—such as HP, Intel, Microsoft, AMD, ATMEL, Sun Microsystems, NASA and IBM— global leaders in computer science technology. San Francisco, Marin County, Berkeley, Oakland, and the beaches are all within one-hour's travel by bus, train, or car. The Monterey Peninsula, Carmel and the famous Napa Valley wine country are all less than two hours away. San Jose International Airport is about nine miles from campus.

University Address:
California South Bay University

762 San Aleso Ave.
Sunnyvale, CA 94085
Tel: (408) 400-9008 (Admission)
Fax: (888) 225-1868



Academic Calendar

2009-2010

Traditional Trimester Scheduling
Traditional Trimester Scheduling consists of three 15-week terms scheduled throughout the academic year.

Spring Term 2009
(January19, 2009 – May 8, 2009)

December 29 – January 16, 09	Registration
January 19	Classes begin
January 23	Last day for Late Registration
January 30	Last day for withdrawing from classes
March 30	Advanced Registration for Summer Term
April 4	Last day to file for graduation this term
April 20 – April 25	Finals

Summer Term 2009
(May18, 2009 – September 4, 2009)

May 4 – May 15	Registration
May 18	Classes begin
May 22	Last day for Late Registration
May 29	Last day for withdrawing from classes
July 27	Advanced Registration for Fall Term 2009
July 31	Last day to file for graduation for this term
August 17 – August 22	Finals

Fall Term 2009
(September 14, 2009 – January 9, 2010)

August 31 – September 11	Registration
September 14	Classes begin
September 18	Last day for Late Registration
September 25	Last day for withdrawing from classes
November 30	Advanced Registration for Spring Term
December 4	Last day to file for graduation for this term
December 14 – December 19	Finals

Spring Term 2010
(January 18 2009 – May 7, 2010)

January 4 – January 15	Registration
January 18	Classes begin
January 22	Last day for Late Registration
January 29	Last day for withdrawing from classes
April 5	Advanced Registration for Summer Term
April 9	Last day to file for graduation for this term
April 19 – April 23	Finals

1. ADMISSIONS

To apply for our school either fill out the online application form (http://www.csbu.us/application.html), or pick up an application form from the administration office.

Admission Policies

1. **CSBU admits all qualified individuals into the university without regard to race, religion, sex, ethnic origin, or physical handicap.**
2. **CSBU makes education available to all individuals who need the qualifications for entrance into CSBU**

The CSBU Admissions Committee provides individualized admission evaluation service and follows the approved credit transfer policy to transfer credit for each application.

Applications

All CSBU Applications must include:

1. Completed CSBU Application Form (hard copy, can only be submitted once every academic year).
2. Copy of any two kinds of photo ID.
3. Non-refundable Application Fee ($50).
4. Submit official transcripts from all previous colleges attended.
5. Submit either a TOEFL score or any kinds of English as Second Language test score result taken within the last two years to verifying your English Proficiency.
6. Recommendation letters (optional)

Admission Procedures

1. The applicant will complete the Admission Application.
2. The applicant will successfully complete the placement test.
3. The applicant will provide copies of any academic transcripts.
4. Complete the enrollment paperwork:
    a. Enrollment Agreement
    b. Notice of Student's Rights
    c. Read School Policy

Cancellation of Admission and Readmission

If an applicant is accepted into a degree program for a given semester and does not begin classes in that semester, admission will automatically be cancelled. The prospective student's application records (transcripts from previous colleges and American language proficiency records) are kept on file for a period of six months from the semester start date. If the applicant then wishes to be considered for readmission in a later semester, he/she will be required to resubmit 1) an application form and pay 2) a readmission fee. A re-evaluation of admission will be made for the applicant.

Trimester Admissions:

Applicants may apply for admissions into any of the three Trimester Terms each year. (January, May, and September)

Entry Status
Unless otherwise determined by the Admissions Committee, all newly admitted students are to have "Entry Status" at CSBU. After the successful completion of two terms, or 18 credit units, students will automatically become "Full Status" students.

Transfer Credit

- Credit units earned at other universities, colleges and educational institutions may be transferred into CSBU as evaluated by the Admissions Committee.
- Awards of academic credit may be granted to students who demonstrate competency in a subject area based on their academic, occupational, as evaluated by the Admissions Committee individually.

Master's Degree
The minimum requirements for admission are as follows:

- Evidence of baccalaureate degree or an 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 to transfer 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.

The minimum requirement of a Full Time master's enrollment is as follows:

- Enrolling in 9 credit units in 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.

2. FINANCIAL INFORMATION

Tuition and Fee per Trimester:

Application fee (domestic students) (one time fee, nonrefundable, sent with each application form)	$ 50.00
Tuition for graduates (per credit unit for all courses & thesis)	$295.00
Tuition for ESL program (per credit unit)	$100.00
Registration fee	$ 50.00
Late registration fee[1] (Trimester Scheduling only)	$100.00
Student association membership (per term or equiv month)	$ 50.00
Late payment fee	$ 50.00
Class Drop Fee	$ 20.00
Class Add Fee	$ 20.00
Fee for filing petition for incomplete grade	$ 50.00
Fee for course examination under *Challenge Test Option*	$ 100.00
Graduation fee (when file in for graduation request)	$ 280.00
Cooperative education fee (per graduate credit unit)	$ 295.00
Academic transcript fee (per copy)	$ 10.00
Returned check fee	$ 20.00
Transfer Process fee	$100.00

[1]*Nonrefundable, regardless of the number of credit hours registered*

Financial Obligations and Refunds

Students may formally withdraw from a class by handing in a completed *Course Drop Form* obtained from the office. If a student withdraws from a course, he/she may be eligible to receive a refund, the amount of which will be in accordance with the following chart. The student must return 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

CSBU's student on-campus work-study opportunities

Limited openings are available to CSBU students that qualify. CSBU work-study application forms are available at the Information desk.

Students may apply for Learning Assistantships (LAs) and Administrative Assistantships (AAs). These assistantships are offered primarily on the basis of outstanding academic and professional achievements.

Each trimester the administration works with the faculty to assign LAs. The purposes of LAs are to assist faculty by grading student homework and to help students by holding office hours in order to tutor students who have questions about the instructor's class. They are available at the LA office when the instructors may not be available.

The University also assigns administrative assistants (AA) to provide computer systems and administrative services for students including computer systems support, campus direction, school information and administrative routine assistance.

The objectives of offering assistantships are as follows:

To provide students with more convenient assistance in mastering knowledge they have learned in class;
To promote student-to-student and student-to-faculty communication and academic contact;
To improve assistants' abilities in solving problems as team leaders and in-handling assignments as qualified professionals.

Industrial cooperative projects and internships opportunities

Highly selective internship opportunities are available for qualified students with a number of local companies. For further information, please contact the Administration Office.

3. Enrollment

Adding and Dropping Courses

Unless otherwise determined by the Academic committee, students are not allowed to add any courses after the sixth week of instruction. Students that wish to drop a course must do so before the fourth week of instruction to not have it affect their grades. Dropping a course after the fourth week of instruction will result in a grade of WP or WF, depending on whether the student passed or failed the course before the time of dropping. Refund of tuition will be issued for a dropped course as stated in the 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). Refund of tuition will be issued for a dropped On-Demand course as 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 losing their tuition and fee waiver for the term. Students who lose their waivers must pay the full cost of tuition by themselves.

Advisors

All students must have an academic advisor in programs in which the students seek a degree. The academic advisor will assist in planning a program of study that both fits the needs of the student and satisfies the program requirements. ***Advisor approval is required for registration***.

Continuation and Probation Rules

Students are considered to be in good standing if they:

- Have achieved Full Status
- Are not on probation; and
- Are making satisfactory progress towards degree requirements, including a project or thesis if required.

Course Load

Graduate students who enroll for 9 to 12 credit hours will be considered to be full time students.

Satisfactory Academic Progress

CSBU will assess the academic progress of all its students at the end of each term.

A graduate student will be placed on academic probation if after attempting at least 18 credit hours his/her GPA is less than 2.0 or the student has earned less than 9 credit hours. The graduate student will also be placed on academic probation if, after attempting at least 27 credit hours, the student's GPA is less than 2.0 or the student has earned less than 18 credit hours.

If a student takes the failed course more than once, the higher grade will be used in calculating the cumulative GPA (CGPA). However, all credit hours, whether the subject is original or the repeated course, are included as credits attempted.

Students under academic probation are still eligible for financial aid. However, if a student receiving federal financial aid whose cumulative GPA (CGPA) is less 27 units for graduate student will no longer be eligible for federal financial aid and will be dismissed, unless the student wishes to continue without being eligible for federal financial aid. However, a student not meeting the CGPA standards may remain as an enrolled student who is still eligible for federal financial aid if there are documented mitigating circumstances (i.e., death in the family, sickness of the student, etc.).

Students who reestablish satisfactory progress will be removed from academic probation. Students who fail to clear their academic probation within five academic terms will be dismissed.

Students on academic probation who change programs or seek additional degrees will remain on academic probation and their previous CSBU academic record will be used to determine the satisfactoriness of their academic progress.

To address special circumstances, students may appeal by filing petitions to the school's Academic committee. Petition forms can be obtained from the Registrar's Office.

Classes – Scheduling Hours

Most classes at CSBU are between 5 and 10 p.m. weekdays, or on the weekends, meeting one day per week. A few courses are scheduled between 9 a.m. to 7 p.m. (For more details please contact front desk).

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 is equivalent to 15 classroom hours of lecture. Additional, one semester credit hour equals 30 laboratory hours and one semester credit hour equals 45 practicum hours.

.

Grading System

The following grades are used:

Grade		Grade Point
A	Excellent/Distinction	4.00
A-	Intermediate grade	3.67
B+	Intermediate grade	3.33
B	Above Average	3.00
B-	Intermediate grade	2.67
C+	Intermediate grade	2.33
C	Average/Minimal	2.00
C-	Intermediate grade	1.67
D+	Intermediate grade	1.33
D	Minimal Pass / Below Average	1.00
D-	Intermediate grade	0.67
F	Failure	0.00
W	Withdrawal	
S	Satisfactory (pass-fail option)	
U	Unsatisfactory (pass-fall option)	
NCR	No Credit	

E	Deferred Grade
R	Deferred Grade-Project/Thesis
TR	Transfer credit
CR	Credit by passing challenge examination (Grade equals C or better)
IP	In process
AU	Audit
I	Student Incomplete
X	Instructor Incomplete

Course	**Course Designations**
100-399	Undergraduate
400-499	Graduate and qualified seniors
500-799	Graduate courses

GPA calculation: All GPA's are calculated by the following formula: grade points times' course credit=course grade points; total course grade points for the term divided by total calculable credits for the term=grade points average for the term. The term GPA is based on all courses with calculable in a term; the cumulative GPA is based on all courses with calculable grades. Students may retake any course at any grade level below an "A". All grades will be recorded, but only the first retake grade recorded will be computed on the final graduation record. Retakes are noted by "R".

A grade of at least C- or P is required for master's degree programs. However, all registered credit hours are counted as attempted credit hours and all grades except I, P, NP, WP, WF, AUD and NR are used in computing the GPA. A graduate student must earn a cumulative 2.0 or above GPA to be eligible for the master'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 other accredited institutions.

Registration

Registration procedures and class offerings can be found in the Class Schedule or on the school website each semester. Students are responsible for the complete and accurate processing of their registration according to the guidelines.

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 and is not automatic. For graduate degrees, no more than 25 percent of the credit hours can be transferred unless otherwise determined by the Academic committee. This limit includes courses taken as a non-degree student. Transfer credits for individual courses are accepted only when the student has received a grade of B or above.

Auditing Courses

Students wishing to audit a class must provide a form bearing the approval of the instructor and the administration office and file it with the Office of Admissions and Records.

Policy for Incomplete Grade

In order to receive a grade of "I", the student must file a petition with the Registrar prior to the final examination week after obtaining written approval from the instructor of the course he/she wishes to receive a grade of "I" in. The grade "I" is used only for circumstances or situations beyond the student's control. An "I" that is not removed by the deadline will remain on the student's record as an "I", with no credit earned, and will not be computed in the student's GPA.

Placement Test Option

CSBU recognizes that exceptional students, for various reasons may have already achieved the learning objective of a course, so a *Placement Test Option* is provided. At the discretion of the instructor and the Academic committee, CSBU offers a *Placement Test Option* for students to see if they have 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. The results of the Challenge Test will be recorded in the transcript.

4. University Regulations

Academic Grievance Procedures

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

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 side 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 the situation is unable to be resolved through any reasonable informal method, a student or employee may escalate it to a grievance. A formal grievance must be filed within 45 days from the time the student or employee believes, or reasonably should have known, that an occurrence has affected his/her status. This period of 45 days includes all informal efforts to resolve the grievance. The student must fill in and submit the grievance form to the Administration Office and a proper administrator will conduct an investigation of the grievance and may interview the student and other people related with the grievance for further clarification. After the investigation, the administrator will either grant or deny the students suggested resolutions or provide other means of resolution. The decision will be notified no later than 14 days following receipt of the written grievance. If the administrator does not resolve the situation in a way that is satisfactory to the student, the student has 14 days to appeal the decision to president of the university upon written receipt of the appeal. The president then has 14 days to notify the student of his decision, either grant or deny the redress sought or provide other resolutions. 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

CSBU is dedicated to learning and research, and is committed to truth and accuracy. Integrity and intellectual honesty in scholarship and scientific investigation is, therefore, of great 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

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

Nondiscrimination Policy

The commitment of CSBU 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 CSBU is to comply fully with applicable federal and state nondiscrimination and equal opportunity laws, orders and regulations. CSBU 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 CSBU 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 CSBU. Sexual harassment is prohibited under federal and state discrimination laws and the regulations of the Equal Employment Opportunity Commission.

CSBU 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 CSBU is free of sexual harassments, appropriate sanctions will be imposed on offenders in a case-by-case manner. CSBU will respond to every complaint of sexual harassment reported.

Encumbrance of Registration and Records

Students who owe any money to CSBU 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

CSBU's graduate programs are designed to prepare students for the practice of electrical engineering, computer engineering, computer science, and business administration at a professional level. In addition to courses teaching the fundamentals, each degree curriculum is designed to incorporate Silicon Valley's major industries in electronics, computer engineering, enterprise management, and global business development.

As Silicon Valley is a dynamic and fast changing high-technology hub where fierce competition among businesses is the norm, employers are more demanding on workers' qualifications. Job seekers in the Valley are required to be well prepared in their background training as well as continued education.

CSBU's curriculum committees in various disciplines hold regular meetings to ensure that the curriculum design and facility support in hardware and software can meet the industry standards. Further, faculty members must have had previous or current industry experience and are equipped with up-to-date knowledge and skills in their teaching subjects.

Degree Titles and Specialization

1.) Masters of Business Administration (MBA)
2.) Master of Science in Biotechnology Management (MSBM)
3.) Master of Health Care Management (MHCM)
4.) Master of Science in Electrical Engineering (MSEE)
5.) Master of Science in Computer Science (MSCS)
6.) Master of Science in Green Energy (MSGE)

School of Business:

Purpose

The School of Business offers graduate degree programs. This is an educational program in the business and organizational disciplines intended to prepare individuals to make sustained contributions to organizations and society in a global, diverse and dynamic environment, focusing on developing an individual's interdisciplinary problem solving skills, interpersonal and communication skills, ability to adapt to changing information technology and business environment, spirit of entrepreneurial innovation, and ethical and professional values. Successful completion requires not only an understanding of the important functional skills in accounting, financial management, marketing, business law, and business and project management, but also an understanding of modern information systems, Internet technology pertinent to e-commerce and e-business applications.

To help the students gain real-world experience, an enterprise resource-planning tool, such as SAP software, is integrated into the business curriculum. A number of faculty members will guide the students to practice using SAP software and its applications in an enterprise environment.

Faculty

CSBU's emphasis on a community of scholars and integrated education attracts faculty who are as committed to their students' intellectual and moral development as they are to pursuing their own scholarship. CSBU's full-time faculty members in school of business include experienced professors with advanced degrees in Business Administration and love teaching and helping students to solve problems on academic studies.

Objectives

Problem Solving: Each student will be able to systematically diagnose problems and/or opportunities, especially in business settings, and develop alternative courses of actions to resolve the problems or take advantage of the opportunity.

Strategic Thinking: Each student will have an understanding of long-range/strategic management and will be able to develop, implement, assess, and refine a strategic plan in a business setting.

Organizational Change: Each student will be able to systematically diagnose an organization's environment and operations to identify needed changes and to develop plans to successfully implement those changes in ways that achieve the organization's goal(s).

International/Global: Each student will have an understanding of global influences on business decisions/plans and/or develop plans for managing a business in a global environment.

Workgroup Functioning: Each student will be able to contribute to the success of his/her workgroup by occupying a leadership role and/or as a team member.

Master of Business Administration (MBA)

Objectives

The primary objectives of the master's degree program are: (1) to provide a knowledge base of interdisciplinary business theories and techniques to the students, particularly to the working adult population, and (2) to train and to develop students' practical management skills in a chosen concentrated area for career development, and (3) to develop the students' decision-making capability to face the challenge of the dynamic business world staged with diverse, multicultural, and global business settings.

Concentration of Study: The MBA program provides an opportunity for the student to choose from a variety of concentration areas including: information technology and enterprise management systems, accounting, project and technology business management, global business marketing, legal issues and intellectual property management, health service management, and hospitality management.

Graduation Requirements: A minimum of 36 units is required, 12 from each of the following categories, Basic courses, Electives, and Area of Concentration. Students must also makeup for any background deficiencies by taking additional courses even if 400 level courses may be used as elective units. A grade of "B-" or better must be earned in all basic courses and area of concentration, and a grade of "C-" must be earned for all elective courses. GPA 3.0 or better is required, and students must be in good standings with the university. After fulfilling the requirements stated above, the student may file a petition for graduation and if approved, may graduate.

Concentration Area and Career Planning

All graduate students in the MBA program at NPU are advised to plan for their studies and choose a concentration area early. Before or upon completing 12 units in graduate course work, the student must choose a concentration area. Academic counselors are on-hand to assist the student to make his/her study plan and assess the technology trend and job market.

The students are encouraged to utilize the online eCareer Center and work with Student Services counselors to prepare their resumes and participate in job search activities when they are ready for such a pursuit.

Master Project/Thesis: Students interested in doing research and development work may choose to do a 3-unit master's project or 6 unit master's thesis to earn elective units. Students should pay attention to the requirements for completing the project/thesis.

Advisor: The master's thesis course may be registered as a two-part course, with each part as a 3-unit course, taking a total of two semesters to complete. A faculty member serves as the project/thesis advisor to offer guidance to the student.

Repeat: A student unable to complete the project/thesis in the semester he/she is enrolled in the course is required to continue to enroll in the course the following semester until completion of the project/thesis. Upon completion of the project/thesis, the student or the project team is required to submit a project/thesis report, following the university's project report guide, to the project advisor for approval before submitting it to a technical writer for editing. The student or the project team must also arrange an open-forum presentation to share the work experience with other students.

Grade
The student receives an "S" or letter grade for satisfactory performance and earns the credits, or an "NP" grade for unsatisfactory performance without earning credit in each semester the project is being conducted. Letter grades issued by the advisor are acceptable. Extra credits earned for repeatedly taking the project/thesis cannot substitute for other course requirements.

Electives
In addition to the seven waivable required courses and the 9 nonwaivable required courses discussed above, students select 24 units of elective credit to complete their MBA program. Any course offered in conjunction with the MBA program with the exception of those otherwise required or waived is considered an elective.

The student receives an "S" or letter grade for satisfactory performance and earns the credits, or an "NP" grade for unsatisfactory performance without earning credit in each semester the project is being conducted. Letter grades issued by the advisor are acceptable. Extra credits earned for repeatedly taking the project/thesis cannot substitute for other course requirements.

Changes in Degree Requirements

CSBU policies and requirements are subject to change, and changes may not be immediately reflected on campus websites or publications. New degree requirements, however, will not imposed retroactively on continuing students unless agreed upon by the students. If degree requirements are changed, students may complete their degree programs under the requirements in effect at the time of their initial enrollments (readmission, if key have discontinued degree status). They have the option of electing to be governed by the new requirements if they are so desired and provide that all requirements of one catalog are met.

MBA Background Preparation

Students admitted to the MBA degree program are required to have proper business background preparation for taking the graduate level coursework. The student must clear all deficiencies before being allowed to take the degree required courses. A student with deficiency in any required background subject must clear it by either 1) taking courses for credits at CSBU and earning a grade of at least C- or higher or 2) taking and passing the appropriate preparatory module of studies. With advance approval by the academic review committee, the student may be allowed to take proficiency exams to clear his/her background requirements. The following are the required background subjects:

A. Management and Business Law (MGT320, MGT461, MGT491, MGT511, MGT 516, MGT 520, MGT525, MGT540, MGT550, Law 420)

B. Economics and Marketing (MKT514, MKT551)
C. Accounting and Finance (ACC320, FIN 410, FIN520)
D. Quantitative Analysis and Information Technologies

MBA Curriculum

The MBA program requires a minimum of 36 semester units of graduate study. A maximum of four 400 level courses are allowed to count towards graduation credits. Before the student takes any one the courses below he/she must meet the prerequisite requirements.

1.) Basic Courses (12 credits)
The basic courses provide a base for interdisciplinary business theories and techniques and decision-making methodology. A student must take the following courses to complete the required graduate course requirement:

MGT511 Human Resources Management
BUS520 Quantitative Methods for Business
MGT516 Production and Operations Management
FIN520 Financial Management

2.) Area of Concentration (12 credits)
Apart from required graduate courses in section 1, students must additionally select an area of concentration and complete at least 12 credits (4 courses) in the chosen concentration area. This is to ensure the student is competent in the selected area. The courses taken to fulfill the concentration requirement must not overlap the courses taken for the above Foundation Courses requirement. As new courses are also offered between publications of the university catalogs, the students are advised to refer to the "Concentration Area Course Tables" published with each release of the semester class schedule to select courses for meeting the concentration area requirements.

Area A. Project Management
(Prerequisites: Advanced graduate standing)
Required courses:
MGT520 Project and Risk Management
MGT525 Supply Chain Management for E-Business
MGT540 Managing for Quality Improvement
MGT550 International Business Management

Select two other graduate courses in this concentration area.

3.) Electives (12 units)

Students may elect graduate-level courses 400 or 500-level, and higher courses in any discipline as electives to meet the elective requirements.

Mezzanine Courses for program requirement - Students admitted with a background deficiency in organizational behavior and management must take the course of MGT471 Organizational Behavior and Management course and those with a deficiency in Entrepreneurship and Venture Business must take

"MGT501 Entrepreneurship and Venture Business " course at CSBU. Credits earned can be counted as elective credits towards the MBA graduation requirements.

* Other background requirements for the concentration areas: Each concentration area requires certain 400 level background courses. Students may earn credit towards the degree, if observing the limit for the number of 400-level courses for the program, by taking these courses, such as

a. Area A (Project Management): MGT461

MBA TOTAL REQUIREMENT (36 CREDITS)

MBA Course Description

ACC320 Principles of Accounting (4.0 credits)
This course teaches students the basic foundations for accounting principles. The 6 main topics are: an introduction to basic elements of financial accounting, setting up and using a general journal, how to record and analyze financial transactions, various types of accounts and how to use them, and accounting methods for different types of business. SAP R/3 concepts will be introduced. Students may also use certain kinds of accounting software.
Prerequisite: Instructor's Consent

ACC410Cost Accounting (3.0 credits)
Students taking this course are taught the relationships among cost, volume, and profit, the process and job-order methods; standard costs, activity based costing, variance analysis, quantitative method and models used in management. It also teaches the students how to use their fundamental knowledge in decision making in a business.
Prerequisite: ACC320

ACC460 Intermediate Accounting - I (3.0 credits)
This course is only for students who are interested in becoming accounting professionals. This course builds on the knowledge obtained in Principles of Accounting series. Students are taught how to understanding financial accounting and accounting standards, required disclosures, financial statement preparation, and an in depth study of current assets, how to calculate revenues and fixed assets. Students will be taught how to use popular accounting tools for both homework and exercises.
Prerequisite: ACC320 and FIN410

ACC490 Intermediate Accounting - II (3.0 credits)
This course is a continuation of Intermediate Accounting - I (ACC462). Students are taught about current and long-term liabilities, investments, stockholders' equity, post-retirement benefits, leases and cash flow statements.
Prerequisite: ACC460

ACC510 Introduction to Taxation (3 units)
This course covers taxation concepts applied to individual's income, deductions, credits, property transactions, and tax accounting methods. An understanding of the concepts will enable students to prepare quality individual income tax returns as a professional. The course will also cover taxation rules governing financial planning.
Prerequisite*:* **ACC320**

ACC520 Advanced Accounting (3 units)
This course is designed for accounting track graduate students who want to have a complete understanding of the concept of consolidation requirements, consolidated financial statements, and accounting techniques relating to particular types of business and non-business entities. The student will also explore various tax aspects of consolidated financial statements and participate in case studies.
Prerequisite: **ACC460**

ACC522 Federal Taxation of Business Enterprises (3 units)
This course is designed to give students an understanding of the concepts of federal taxation of corporations, partnerships, estates and trusts. An understanding of the concepts will enable students to prepare corporation and partnership tax returns in a professional environment. Also covered are rules governing estates and trusts.
Prerequisite: **ACC500**

ACC530 Managerial Accounting (3 units)
This class applies the essentials of financial accounting to the practice of management. Students will understand cost definitions, cost concepts, cost behavior and cost estimation; also, how cost accounting is applied to manufacturing and service organizations, the principles of planning and control for effective cost-related management, capital budgeting, cash flow statements, and how to analyze financial statements.
Prerequisite: instructor's consent.

ACC540 Auditing (3 units)
In this course, students learn auditing techniques with an emphasis on the Electronic Data Processing environment, audit procedures, practice and programs; working paper preparation and report writing. The students will experience using electronic auditing software to work on their homework and projects.
Prerequisite*:* **ACC212**

ACC550 Accounting Information Systems (3 units)
This course provides a conceptual framework for contemporary accounting information systems and accounting cycles. It covers database concepts, internal control, transaction cycle and business process, expenditure cycle, conversion cycle, general ledger, and enterprise resource-planning systems. Students may be introduced to SAP R/3 for data manipulation and report generation.
Prerequisite: **ACC212**

FIN 410 Fundamentals of Finance (4.0 credits)
Students taking this course will be introduced to the world of finance. Financial management is a technique used by corporation managers to raise and allocate capital in a manner that will maximize revenue and stabilize the firm's future cash flows. This course examines the concepts and techniques available to financial managers as they address various aspects of the financing and investment. Topics include financial background, financial statements, a review of accounting, and taxes; cash flow and financial analysis, time value of money, the financial system and interest, the characteristics of bonds, the valuation and characteristics of stocks, capital budgeting, risk and return, and also international finance. A case study will be applied to assist students' learning. SAP R/3 may be introduced.
Prerequisite: Instructor's Consent

FIN520 Financial Management (3.0 credits)
This class teaches students to apply the essentials of financial accounting to the practice of management. Students will understand the definition, behavior, concepts, and estimation of cost; and also about how cost accounting is applied in manufacturing and service organizations, the principles of planning and control for cost-related management, cash flow statements, capital budgeting, and how to analyze financial statements.
Prerequisite: FIN320 or Instructor's Consent

FIN530 Investments (3.0 credits)
This course will cover the basis of investment and how to manage it. Students will be taught about theory and empirical evidence, related to market efficiency, portfolio theory, assess pricing models, factor models, and option pricing theory. Students are taught to combine market research results and electronic information sources to create investment strategies.
Prerequisite: FIN 520

LAW420 Introduction to Business Law (4.0 credits)
This course is an introductory-level course for students interested in U.S. business law. The course will prepare students in spotting potential legal issues in the operation of businesses so they can operate legally and know when to consult an attorney before taking action. The course begins with an overview of the U.S. legal system, its fundamental structures and processes. Emphasis is placed on the increasing role of administrative agencies, as well as on basic contract law principles. Students will also be exposed to several substantive areas of law affecting business.
Prerequisite: Instructor's Consent

MBA608 Master's Project (3.0 credits)
This course is designed to develop student's research abilities. The student or project group will conduct the project under the close supervision of a project advisor. The research and development approach must employ up-to-date information and methodologies. Students are required to: 1.) Make decisions on the subject and formulation of the objective, 2.) Plan the research and development procedures and practical approach, 3.) Set a time table and operation instructions, and generate a proposal, 4.) Carry out their plan 5.) Exam and write a report regarding the results at the end. The project topic and proposal must be approved by the project advisor. The format of the report must be in accordance with CSBU's project style guide and be approved by the advisor and tech writer.
Prerequisite: Advisor's approval

MBA609A Master's Thesis - I (3.0 credits)
This is the first part of a 2-part master's thesis course designed for students in the Business Administration program who plans to pursue his/her research interests on a deeper level. Each part requires one trimester to complete half of the entire project work. In this first part, the advisor will assist the student in identifying the research topic, shaping research ideas, and defining the research objectives and scope. The student then performs the following: topic studies, defining the project objectives and procedures, writing a project proposal and submitting it to the administration after obtaining his/her advisor's approval, working on research and implementation of the project, and documenting findings. Students are required to meet with the advisor regularly.
Prerequisite: Advanced graduate standing

MBA609B Master's Thesis - II (3.0 credits)
This is the second part of the master's thesis course. At the beginning of the semester, the student should draw a conclusion on the research and development work for the project and begin to write a thesis report. The student should make and analyze the project work and results. This way, the student will gain in depth knowledge of the selected subject and develop independent thinking and research capabilities. The report must be approved by the advisor and a tech writer. Upon completion of the project, the student is required to conduct an

open-forum presentation of the project.
Prerequisite: MBA609A

MBA 610 Case and independent study (3.0 credits)
Independent studies tailors to student special interest in business administration under the direction of an instructor who is knowledgeable in the field. It may consist of reading, homework, tests, projects or presentations determined the instructor.

MGT320 Principles of Management (4.0 credits)
Students who take this course will learn the foundations and basic skills of management. Specifically, students learn organizational structure and environment, and develop skills in setting objectives in planning, leading, organizing, decision-making, controlling and motivating, communication and negotiating, and managing information for decision making. SAP R/3 may be introduced as demo software.
Prerequisite: instructor's Consent

MGT461 Organizational Behavior and Management (3.0 credits)
Students who take this course will explore the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, motivation, perception and problem solving. Students explorer interpersonal and intrapersonal aspects to learn about the management of change, theories in leadership and organizational issues. Students will participate in real case projects.
Prerequisite: MGT 320 or Instructor's Consent

MGT491 Entrepreneurship and Venture Business (3.0 credits)
This course teaches students the full range of the entrepreneurial process including the evaluation, development, and creation of a successful business. It will help the potential entrepreneurs and professionals visualize and experience entrepreneurial development. The course explores the entrepreneurial approach to resources such as the development of an organizational structure, financing entrepreneurial ventures, market analysis, and screening venture opportunities. Individuals will experiment and evaluate what it takes to be an entrepreneur including developing the plan for a new business.
Prerequisite: Senior standing and MGT 461 or Instructor's Consent

MGT511 Human Resources Management (3.0 credits)
This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed
Prerequisite: MGT461 or Instructor's Consent

MGT516 Production and Operations Management (3.0 credits)

This course is designed to teach students basic theories about production and operations management. Emphases will be on planning, organizing, controlling,

and balancing quantitative aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn about basic management processes, resource conversions, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, facility and layout planning, product and process design choices, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 will be used as demo software.
Prerequisite: Senior standing or Instructor's Consent

MGT520 Project and Risk Management (3.0 credits)
This course is designed for students who are interested in pursuing the project management area of study. Students will be introduced to the principles of project and program management, followed by the roles of project management, matrix organization and project management techniques, leading students to the efficiently execute and complete projects. Students will also learn how to identify and analyze project risks, and how to reduce or eliminate risk-related factors. These techniques are useful in project proposal development. Methods for ongoing risk assessment and project performance evaluation are included. SAP R/3 may be utilized for hands-on experience.
Prerequisite: MGT 461 or Instructor's Consent

MGT 521 Organizational Behavior (3.0 Credits)
This course focuses on the challenges of managing complex systems. We will explore the leadership and motivational skills relevant to performing as an effective manager, and discuss the different roles associated with managing the individual, the unit, the organization, and the larger system.
Prerequisite: Advanced graduate standing or Instructor's Consent

MGT525 Supply Chain Management for E-Business (3.0 credits)
Students taking this course will learn about applying evolving methods in integrating the process of product distribution and supply chain management using electronic business skills. This course will teach students specific methods that will allow them to profitably and efficiently fulfill customer demand through the Internet.
Prerequisite: MGT516

MGT540 Managing for Quality Improvement (3.0 credits)
This course introduces the principles of quality management to students in the context of organizational and cultural change dedicated to the continuous improvement of products and services. The course will focus on quality control and quality assurance in project execution and ongoing operation environment. Students will learn about quality planning and quality management through hands on practice, including quality plan development and execution, quality management processes and implementation. Many quality management techniques and methodologies will be introduced during the course, and students will be lectured about ISO 9000 and other quality standards.
Prerequisite: MGT461 or Instructor's Consent

MGT550 International Business Management (3.0 credits)
This class teaches students to review the classic five functions of management: planning, organizing, staffing, leading, and controlling. Students will compare managerial practices of many countries. The class will also cover the importance of quality and continuous improvement for gaining a competitive edge. Students will learn practical aspects of management from actual case studies, the strategic

considerations for management in the international environment, and the roles of the latest information technologies, including computer networks, decision support systems, telecommuting, and CAD, CAM, CAE.
Prerequisite: Advanced graduate standing or Instructor's Consent

MGT552 Technology Product Management and Marketing (3 units)

This course is designed to give students a practical experience in product development, and focuses on the management of engineering and technology activities. Topics include technology product design, planning, production, marketing, sales, and maintenance; technological product life cycle from research and development through new product introduction, marketing requirement documentation (MRD), product positioning, channel inventory management, outbound communications, and the organizational role of the product marketing manager. Case study and project presentations are required.
Prerequisite: Advanced graduate standing or instructor's consent.

MGT611 Strategic Management (3 units)
This is an advanced-level case study course that integrates the technical skills and concepts of accounting, finance, marketing management, statistics, and computer applications among others. The course first covers the concepts and techniques of strategic management, followed by case studies. Topics cover an overview of the strategic management process, the three strategy-making tasks, industry and competitive analyses, evaluating company resources and competitive capabilities, strategy and competitive advantages, matching strategy to a company's situation, evaluating the strategies of diversified companies, implementing strategy, and case studies.
Prerequisites: Advanced graduate standing or instructor's consent.

MGT613 Manpower Planning (3 units)

This course begins with the discussion of the need for manpower planning and gives samples of plans developed for various types of organizations such as manufacturing, high-tech, small business, etc. This course would give students an opportunity to learn about and develop a manpower plan which is part of the Business Plan and also an ongoing dynamic document developed as a part of the Strategic Planning component of the organization. It also has to do with scheduling, rosters and succession planning which is a process of identifying a long-term plan for the orderly replacement of key employees. The course also explores cases of developing a manpower plan including developing a Gap Analysis to determine manpower needs and budgeting for the manpower needs. Developing new HR manpower configurations such as self-managed teams, telecommuting, outsourcing, temps-to-hire and other methods to make companies more flexible and offer economical solutions to the high cost of knowledge workers. The course includes case studies and actual writing of several manpower plans for various sizes of organizations.
Prerequisite: **MGT511**

MKT320 Principles of Marketing (3 units)
This course introduces the major principles of marketing, marketing's role within the company and in the global economy. Studies will focus on how to find marketing opportunities with market segmentation, how to get information for marketing decisions, the elements of product planning and new product development, wholesalers and retailers and their strategies, pricing, and promotion.

MKT460 Marketing Management (3 units)
This course studies marketing management by analyzing real-world cases. Students will learn to implement and execute the marketing process through situation assessment, strategy formulation, marketing planning, marketing implementation and evaluation.
Prerequisite: **MKT320**

MKT 514 Marketing (3.0 Credits)
This course introduces students to the marketing strategies and tactics that provide competitive opportunities for healthcare organizations. The course focuses on the marketing elements of price, place, product and promotion, concepts that are the basis of constructing and implementing a marketing strategy. Other topics include market research, product strategy, new technology and MD's, branding, multi-cultural marketing and promotional decisions, including crisis communications. The class work includes cases, theory and an independent project.
Prerequisite: Advanced graduate standing or Instructor's Consent.

MKT 551 Strategies Marketing (3 credits)
This course teaches students fundamental concepts and practices in marketing research and data analysis, and use of the data and financial analysis to set strategic positioning strategies. Students will learn both the primary source (such as surveys) as well as secondary sources (Internet, publications, etc.) in research techniques and engage to their own marketing research projects. . Emphasis will be on practical marketing research skills of development and basic analysis mechanism leading to strategic marketing. Although statistical analysis will be covered in the course, quantitative analysis skills will be the main focus. The course also supports an overview of quantitative and qualitative tools for strategic marketing, market segmentation process, strategic positioning, and channel marketing issues. Case studies and marketing requirements reports are required.

MKT552 International Marketing (3 units)
This course considers how culture and environment of different countries affect marketing strategy, how to perform a comprehensive analysis of a country to support marketing plan formulation, the strategic implications of different market groups around the world, and special insights on international marketing from a study of special cases.
Prerequisite*:* **MKT460** or instructor's consent.

MKT555 International Trade and Operations (3 units)
The course is designed to develop the knowledge and understanding of the global marketing environment and of the concepts, tools, and theory that will prepare the students to take the responsibility for successful global market penetration for his/her business organization. The perspective of the course is managerial, i.e., the ability to identify opportunity, resolve problems, and implement solutions and programs.
Prerequisite: Graduate standing or instructor's consent.

Master of Science in Biotechnology Management (MSBM)

Purpose

Biotechnology, in the broadest sense, involves the use of living organisms or cell processes to make useful products. The major thrust of the biotechnology industry has been in area of drug development, human and animal nutrition, agricultural chemicals and environmental protection.

Biotechnology Applications

Biotechnology applications are now reaching into industries such as forestry, fisheries, agriculture, clinical medicine, diagnostic medicine, home health care, forensics, paternity testing, food preparation, and ranching. This new program will provide students with hands-on experience in this emerging high-tech area and prepare them to work in area industries, or to go on to medical, professional or academic programs. Biotechnology is concerned with many areas but the primary course work for this program will be centered around cellular chemistry, heredity and genetics. This will be expanded into areas such as biochemistry, antibodies, gene expression, protein synthesis and recovery, amino-acid and DNA sequencing, gene manipulation and modification, PCR technology and molecular genetics.

OBJECTIVE

The biotechnology major is well suited for careers in business development, marketing, and finance in biotech and pharmaceutical companies. The comprehensive understanding of the industry's unique business and technical issues also supports careers in life-science driven consulting, banking, and venture capital. Students are advised to complement their industry education with a functional major such as marketing, finance, or management and strategy.

* Give students a comprehensive training in the state-of -the-art techniques and methodologies used in biotechnology;
* Train students to think independently and solve problems;
* Prepare students for further graduate studies;
* Prepare students for supervisory level positions in the biotechnology industry.

BACKGROUND PREPARATION

Students admitted in to the MSBM degree program are required to have the following background preparation. A student with any deficiency is required to

clear it by either (1) taking the course at other schools and earning a grade of at least C or higher or (2) taking and passing a proficiency before attempting to enroll in graduate level courses.

1) BIOLOGY SUBJECTS:
Protein Engineering (BIOE 531)
Large-Scale Neural Modeling (BIOE 532)

2) TECHNNOLOGY SUBJECTS:

Principles and Practice of Biotechnology (MSBT 501)

Biotechnology Operations (MSBT 504)

3) **MEZZANINE COURSE:** (Student with a back ground deficiency can take these courses and earn graduate credits)

Business of Biotechnology: Contemporary Challenges and Application (MSBT 501)

Business of Biotechnology: Frontiers and Strategies (MSBT 503)

MSBM Curriculum

A minimum of 36 semester units of graduate study are required for the MSBM program. A maximum of four (4) 4xx courses (400 level courses with a designation taken as elective courses) are allowed to count towards graduation credits. The student must meet prerequisite requirements when taking any of the following courses.

1.) Basic Course (12.0 credits)
The required courses emphasize understanding of (1) The molecular and cellular bases of life from an engineering perspective (2) The interaction, communication, and disorders of organ systems (3) Major classes of technologies including imaging techniques, chemical diagnostics, drug design and delivery A student must take the following four courses to complete the required graduate course requirement. These four courses cannot be used to meet concentration course work requirements.

BIOE531. Protein Engineering
BIOE532. Large-Scale Neural Modeling
BIOE555. Advanced Biochemical Engineering
BIOE570. Microfluidic Device Laboratory

2) Area of Concentration (12.0 credits)
In addition to the three required graduate courses in section 1.), a student must select an area of concentration area. This is to ensure the students competence in a selected area. As new courses are also offered between publications of school catalogs, the students are advised to refer of the "Concentration area course tables" Published with each release of the semester class schedule to select courses for meeting the concentration area requirements.

Area Biotechnology Management
Required Courses:
MSBT501. Principles and Practice of Biotechnology
MSBT502. Molecular Technologies
MSBT503. Business of Biotechnology: Fundamentals
MSBT504. Biotechnology Operations

3) Courses for Breath of Study (6.0)

The Student is required to take at least 6 units in graduate courses work outside the chosen concentration area. The courses may be at 400 level or 500 level and above. The student must observe the limits on the number of 400 level courses with a designation.

4) Electives (6.0)
The Student may elect graduate-level courses in any discipline, in or outside the chosen Concentration area, to meet the elective requirement. Elective courses may also include Mezzanine courses taken to meet the background requirements for the program and/or for the chosen concentration area. The students must observe the limits on the number of 400 level courses with a designation.

Mezzanine Courses for Program Requirement
Students admitted with a background deficiency in (1) Molecular and Cellular Engineering and/or (2) Systems Biology and Tissue Engineering must take the course (1) "BIOE200A Molecular and Cellular Engineering" and/or "BIOE200B Systems Biology and Tissue Engineering" at. Credit earned can be counted as elective.

* Other background requirement for the concentration area:
Each concentration area requires certain 400 level background courses. Students may earn credit towards the degree, if observing the limit for the number of 400 level courses for the program, by taking the courses such as (MSBT 501).

MSBM TOTAL REQUIREMENTS (36 credits)

Biotechnology Management Course Description

CORE CURRICULUM

The Biotechnology Graduate Program requires each student to take 6 core courses. These courses are designed to give students the academic foundation necessary to understand the theory behind a wide variety of techniques used in today's biotechnology laboratory. Each student can choose electives from an extensive list. These electives will allow the student to gain specialized knowledge in more specific areas of interest.

The core courses are repeated each year. Students can enter the program at the beginning of any semester.

BIOE 513 INTRODUCTION TO BIOTECHNOLOGY (3.0 credits)
Hands-on experience with fundamental techniques of the biotechnology industry. The course presents topics of biotechnology and discusses the scientific and social issues. Participants will explore textbooks, journals, lab kits and other resources available to teachers.

BIOE 531 PROTEIN ENGINEERING (3.0 Credits)
This is design and engineering of optimized biomolecules emphasizing proteins, combinatorial methodologies, protein structure and function, and biophysical analyses of modified bio-molecules. Clinically relevant examples from the literature and industry.
Prerequisite: basic biochemistry.

BIOE 532 LARGE-SCALE NEURAL MODELING (3.0 Credits)
Emphasis is on corti-cal computation, from feature maps in the neocortex to episodic memory in the hippocampus, and the roles of recurrent connectivity, rhythmic activity, spike synchrony, synaptic plasticity, and noise and heterogene-ity. Techniques to predict and quantify network behavior applied to data recorded from models programmed and run in real-time on neuromorphic hardware developed for this purpose.

BIOE 550 ADVANCED IMMUNOLOGY (3.0 credits)
Monoclonal antibody production; lymphokine analysis; flow cytometric methods (cell sorting), phenotype analysis, DNA analysis; affinity chromatography; mRNA purification; cDNA production; electroporation; immune electron microscopy; rate nephelometry.

BIOE 555 ADVANCED BIOCHEMICAL ENGINEERING (3.0 Credits)
Approaches to combine new biological knowledge and methods with quantitative engineering principles for the production of beneficial products,

quantitative review of biochemistry and metabolism. Applications of recombinant DNA technology, synthetic biology, and metabolic engineering. The modern production of protein pharmaceuticals as a paradigm for advanced process development principles within the framework of current business and regulatory requirements.
Prerequisite: BIOE 431, or equivalent.

BIOE 561 Biotechnology I (3.0 credits)
The topics covered in this course will include gel electrophoresis for analysis of proteins and nucleic acids; radiochemistry; DNA and RNA synthesis, isolation, cloning, and sequencing; RFLP; expression of proteins; and restriction enzyme analysis. Fall.

BIOE 570 MICROFLUIDIC DEVICE LABORATORY (3.0 Credits)
Fabrication of microflu-idic devices for biological applications. Photolithography, soft lithography and micromechanical valves and pumps. Emphasis is on device design, fabrication, and testing.

BIOE 574A BIODESIGN INNOVATION: NEEDS FINDING AND CONCEPT CREATION (3.0 Credits)
Two quarter sequence. Strategies for interpreting clinical needs, researching literature, and searching patents. Clinical and scientific literature review, techniques of intellectual property analysis and feasibility, basic prototyping, and market assessment. Student entrepreneurial teams create, analyze, and screen medical technology ideas, and select projects for development.

BIOE 574B BIODESIGN INNOVATION: CONCEPT DEVELOPMENT AND IMPLE-MENTATION (3.0 Credits)
Two quarters sequence, concept development and implementation. Early factors for success; how to prototype inventions and refine intellectual property. Lec-tures, guest medical pioneers, and entrepreneurs about strategic planning, ethical considerations, new venture management, and financing and li-censing strategies. Cash requirements; regulatory (FDA), reimbursement, clinical, and legal strategies, and business or research plans.

BIOE 586 NEUROMUSCULAR BIOMECHANICS (3.0 Credits)
The interplay between mechanics and neural control of movement. State of the art assessment through a review of classic and recent journal articles. Emphasis is on the application of dynamics and control to the design of assistive technology for persons with movement disorders.

BIOE 590 INTRODUCTION TO BIOENGINEERING RESEARCH (3.0 Credits)
Preference to medical and bioengineering graduate students. Bioengineering is an interdisciplinary field that leverages the disciplines of biology, medicine, and engineering to understand living systems, and engineer biological systems and improve engineering designs and human and environmental health. Topics include: imaging; molecular, cell, and tissue engineering; biomechanics; biomedical computation; biochemical engineering; biosensors; and medical devices. Limited enrollment.

BIOE 654 SYNTHETIC BIOLOGY AND METABOLIC ENGINEERING (3.0 Credits)
Principles for the design and optimization of new biological systems. The development of new enzymes, metabolic path-ways, and organisms for the production of central metabolites, amino acids, pharmaceutical proteins, polypeptide and polyketide antibiotics, and isoprenoids.
Prerequisite: BIOE 455, or equivalent; 455 may be taken concurrently.

BIOE 684 COMPUTATIONAL METHODS IN CARDIOVASCULAR BIOENGINEERING (3.0 CREDITS)
Lumped parameter, one-dimensional nonlinear and linear wave propagation, and three-dimensional modeling techniques applied to simulate blood flow in the cardiovascular system and evaluate the performance of cardiovascular devices. Construction of anatomic models and extraction of physiologic quantities from medical imaging data. Problems in blood flow within the context of disease research, device design, and surgical planning.

BIOE 685 MODELING AND SIMULATION OF HUMAN MOVEMENT (3.0 Credits)
Direct experience with the computational tools used to create simulations of human movement. Lecture/labs on animation of movement; kinematics models of joints; forward dynamic simulation; computational models of muscles, tendons, and ligaments; creation of models from medical images; control of dynamic simulations; collision detection and contact models.
Prerequisite: 431 or equivalent.

MSBT 501 PRINCIPLES AND PRACTICE OF BIOTECHNOLOGY (3.0 Credits)
Principles and Practices of Biotechnology (P&P) is a survey course that will serve as a foundation for further studies in the Master of Science in Biotechnology program. Students will develop a broad understanding of the scientific, political, and legal issues that have driven the development of the biotechnology industry. They will also develop an understanding of how these drivers interact with business and finance to influence the formation and growth of biotechnology companies. Students will be introduced to the ethical issues that help shape public policy regarding both agricultural and medical applications of biotechnology.

MSBT 502 MOLECULAR TECHNOLOGIES I (3.0 Credits)
The course scenario is that of a contract research organization considering offering fee-for-service genetic mutation detection. The students will be divided into two groups, each assessing a different mutation detection technology, either based on input genomic DNA or total RNA. The technologies will be evaluated for scientific merit (accuracy and sensitivity), cost, east-of-use, and comparison to alternative technologies. This analysis will be presented in a final team meeting presentation. Course topics will be covered in readings, lectures and facilitated discussions. Students will apply theoretical knowledge by performing laboratory experiments and data analysis activities and demonstrate their knowledge and skills in discussions, by leading topical presentations, and solving practical problems. There is emphasis on the processes of conducting experiments, recording processes and data in laboratory notebooks, presenting

experimental results, and drawing conclusions to be presented in a lab meeting. The course emphasizes the opportunity for students to practice effective scientific communication in either written or oral formats.
Prerequisite: Senior standing or Instructor's Consent

MSBT 503 BUSINESS OF BIOTECHNOLOGY: FUNDAMENTALS (3.0 Credits)
The Business of Biotechnology: Fundamentals is designed to give the Masters in Biotechnology student an understanding of the basic business principles and the workings of the primary functional areas of businesses. A basic assumption is that the student has had no formal business education and has not worked in a business management position. The main objective of this course is to prepare the student for the two following courses in The Business of Biotechnology.
Prerequisite: Senior standing or Instructor's Consent

MSBT 504 BIOTECHNOLOGY OPERATIONS (3.0 Credits)
This course is designed to provide students with an understanding of how a biotechnology company must operate to be successful and to develop a product for a targeted market. Students will learn about the specialties of nonclinical and clinical development, regulatory affairs, quality assurance, manufacturing, quality control, and program management, as well as their interdependency in support of a specific marketing plan. Students will learn how each of these disciplines are coordinated and synchronized and will develop an appreciation of how the successful biotechnology firm becomes effective and efficient in operations. Students will participate in practical exercises, which include developing products to fill the corporate pipeline, adding value to their products, and generating revenue for their model firms.
Prerequisite: Senior standing or Instructor's Consent

MSBT 601 BUSINESS OF BIOTECHNOLOGY: CONTEMPORARY CHALLENGES AND APPLICATION (3.0 Credits)
The course will focus on important business and managerial issues facing individuals in the biotechnology industries. One of the biggest challenges facing managers and executives in the biotechnology area is to constantly remain creative and innovative. The first session will present concepts and develop skills to encourage "thinking outside the box." While creativity and innovation are two significant proficiencies required in today's dynamic biotech environment, the course also recognizes the importance of many other functional needs related to identifying, obtaining, and organizing/managing resources in building and sustaining a successful organization. Specifically, the CCA series will present the challenges related to specific functional areas in an organization – namely, product development, marketing, finance and accounting, management and leadership.
Prerequisite: Advanced graduate standing or Instructor's Consent

MSBT 602 TECHNOLOGY APPLICATIONS IN EARLY DRUG DISCOVERY (3.0 Credits)
This course provides students with an overview of the early drug discovery process, including target identification and validation, generation of diverse chemical libraries, assay development and high throughput screening, lead optimization by compound profiling, and drug targeting and delivery.
Prerequisite: Advanced graduate standing or Instructor's Consent

MSBT603 BUSINESS OF BIOTECHNOLOGY: FRONTIERS AND STRATEGIES (3.0 Credits)

The course will focus on introducing business strategy, a variety of types of business strategy, and issues that affect the analysis, development, and application of strategy in today's competitive environment. The course will use a variety of delivery tools including in-class lecture, case analysis, problems, "role plays", readings, etc. Assignments will be assigned on a bi-weekly basis and described in greater detail later in this guide. Typically, participants will be required to read several articles before a session, post input to specific questions related to the session, and prepare several case analyses to the session topics.
Prerequisite: Advanced graduate standing or Instructor's Consent

MSBT 604 BIOTECHNOLOGY LAW AND SOCIETY (3.0 Credits)

The course will include a combination of lectures, guest speakers, case studies, and in-class exercises. Students are expected to read assigned materials prior to class and prepare discussion questions on individual materials and readings as a whole. Additionally, comments, questions and discussion will be posted by students and faculty in the interim times between sessions. These are expected to be more than questions for clarification.
Assignments will ask students to react to specific cases or questions utilizing assigned readings, in-class discussions and as appropriate, students' own work experience. Students are encouraged to cross-link material from other courses in the Program with this course. Likewise, discussions of challenges, conflicts arising from differing perspectives, opportunities for problem solving, creative thinking and good biotechnology management are encouraged.
Prerequisite: Advanced graduate standing or Instructor's Consent

MSBT 605 Advanced BIOTECHNOLOGY: GLOBAL PERSPECTIVES (3.0 Credits)

This course is designed as a capstone experience in which students will integrate and apply knowledge and skills gained in M.S. in Biotechnology Program to achieve a new level of synthesis and depth of understanding about an important problem in biotechnology today.
Prerequisite: Advanced graduate standing or Instructor's Consent

Master of Health Care Management (MHCM)

Program description: The health care environment is increasingly competitive and financially driven. At the same time health care providers have become more involved in managing the health delivery system, in addition to managing patients. Physicians in managerial roles face important challenges as they struggle to balance financial and competitive constraints with the patient care mission of their organizations.

Program objective: provide practical skills to physicians who have leadership positions in health care organizations.

Graduation Requirements: A minimum of 36 units are required, 12 from each area of the following categories, Basic course, Concentration course, and Elective course. Student must also makeup for any background deficiencies by taking additional courses, although 400 level courses may be used as elective units. A grade of ―B-― or better must be earned in all basic courses and area of concentration, and a grade of ―C-― must be earned for all elective courses. An average GPA of 3.0 or better is required, and the student must be in good standings with the university. After fulfilling the requirements stated above, the student may file a petition for graduation and if approved, may graduate.

MHCM curriculum

The MHCM program requires a minimum of 36 semester units of graduate study.
A maximum of four 400 level courses are allowed to count towards graduation credits. Before the student takes any one of the course below he/she must meet the prerequisite requirements.

1.) Basic Course (12 credits)
The basic courses provide a base for interdisciplinary health care theories and techniques and decision-making methodology. A student must take the following courses to complete the required graduate course requirement:

FIN520	Financial Management
MGT511	Human Resources Management
HEAL600	Integrated Studies in Health Care
HEAL514	The Law and Health Services

2.) Concentration (12 credits)
The concentration courses are also required for graduating from the program. Students must complete at least 12 credits of concentration courses in this area. This part is concentrate on developing additional theories, skills, technology in Health Care area

HEAL500	Advanced Theories and Concepts in Health Care
HEAL520	Professional Value and Ethics in Health Care
HEAL521	Program Development in Health Care
HEAL522	Politics and Economics of Health Care

3.) Electives (12 credits)
Students may elect graduate level course 400 or 500 level, and higher course in any discipline as electives to meet the elective requirement.

MHCM Course Description

HEAL 500 Advanced Theories and Concepts in Health Care (3.0 credits)
This course promotes an understanding of the usefulness of models and theories in nursing and health care and of the advantages and difficulties linked to the teaching and applications of conceptual framework in these fields. Instruments necessary for the implementation and evaluation of a conceptual framework useful in nursing and health care are developed.

HEAL 512 Issues in Health Care Management (3.0 credits)
The student examines current and significant issues in the health care field. Special emphasis is given to new and emerging theories, technique patterns of organization, and health care delivery systems. Students synthesize and integrate learning from the entire program. The course develops understanding and analysis of factors that determine changes in teaching systems in health professions. Concrete applications (group and individual assignments) are related to training situations experienced by students in their professional lives.

HEAL 520 Professional Values and Ethics in Health Care (3.0 credits)
This course focuses on values and professional ethics in human rights issues. Students explore the theories of ethics and the components of those theories. The exploration enables the student to determine a step-by-step model of decision making when confronted with ethical problems.

HEAL 521 Program Development in Health Care (3.0 credits)
This course involves step-by-step methods of program development in health care. It includes a study of conceptual frameworks: philosophical basis, the student, the setting, the knowledge component, learning strategies, and evaluation.

HEAL 522 Politics and Economics of Health Care (3 credits)
This course involves a study of the three major pillars of health care politics and economics: cost, professional practices, and innovations.

HEAL 532 Quality Assurance of Health Care (3.0 credits)
This course focuses on health care evaluation (especially nursing care evaluation). It involves the study of some evaluation instruments, the use of these instruments in an institution, and the use of the evaluation results for management.
Prerequisites:

HEAL 514 the Law and Health Services (3.0 credits)
The law and legal processes that affect health services institutions are examined. The course presents an overview of legal principles concerned with torts, contracts, and liability as relevant to health institutions. Legal elements of labor relations in the health field and the legal obligations and malpractice law as applied to health professionals and administrators are discussed.

MGT 511 Human Resources Management (3.0 credits)
This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment

legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed
Prerequisite: MGT451 or Instructor's Consent

FIN 520 Financial Management (3.0 credits)
This class teaches students to apply the essentials of financial accounting to the practice of management. Students will understand the definition, behavior, concepts, and estimation of cost; and also about how cost accounting is applied in manufacturing and service organizations, the principles of planning and control for cost-related management, cash flow statements, capital budgeting, and how to analyze financial statements.
Prerequisite: FIN310 or Instructor's Consent

HEAL 600 Integrated Studies in Health Care (3.0 credits)
Within this course, the student chooses a change he or she would like to introduce into his or her service, elaborates and implements a research/development project, and uses the results obtained. During the study, the student keeps a logbook and studies further any needed information. The student writes a detailed report and justifies the actions undertaken.

School of Engineering

Purpose

The master's degree programs in the School of Engineering are designed for students who intend to become professional engineers in the high-technology electronics or computer industry, as well as for those who desire a modern, general education based on the problems and the promises of a technological society. The environment in which students are educated is as important in shaping their future as their classroom experiences. The School of Engineering offers a friendly atmosphere and a variety of academic programs that have made CSBU engineering graduates highly valued in high-tech firms and the Bay Area communities.

Faculty

All CSBU engineering faculty members possess the following qualities: advanced degrees earned in engineering and science disciplines, high-tech work experiences, and enthusiasm in teaching and helping the students. Engineering is not a homogeneous discipline; it requires many special talents. Some faculty members in the School are goal-oriented designers, concerned with teaching students how to solve problems -- how to synthesize relevant information and ideas and apply them in a creative, feasible design. Other engineering faculty members function more typically as method-oriented scientists, using the techniques of their disciplines in their teaching and research to investigate various natural and artificial phenomena.

Objectives

To provide each student a goal-oriented education by tailoring each student's study plan based on the student's background and interests.

To provide in-depth professional training in a range of state-of-the-art specialty areas in electrical engineering, computer systems engineering, and computer science, equipping the student with both a theoretical background and practical experience in these disciplines.

To provide relevant laboratory experience throughout each program as an integral part of the education, emphasizing extensive use of simulation and hands-on practice in the learning process.

To provide a well-rounded and balanced undergraduate education through required studies in engineering, natural science, communications, humanities, and social science.

To nurture a learning environment which leads to professional values recognizing high quality and integrity in truly complete engineers.

To provide further advanced training and professional development for graduate students who wish to practice their profession with increased competence.

GRADUATION REQUIREMENTS

A minimum of 36 credits of graduate-level course work are required for all master's degree programs. Additional coursework may be required for a student whose undergraduate degree program was in a Discipline other than that of the master's degree program.

In each master degree engineering program, there are four categories of course requirements:

1. Required graduate courses

2. Area of Concentration courses
3. Courses for breadth of study
4. Advanced electives

The following are required for graduation:

- A graduate student entered with under graduate deficiencies must clear the deficiencies in the first few semesters after joining CSBU. The student may clear a subject by either taking the course and earning a passing grade or passing a proficiency exam on the subject.
- Earn a grade of "B-" or better in all required and concentration area courses.
- Earn a grade of "C-" or better in all elective courses.
- Maintain overall G.P.A of 3.0 or better
- Maintain good standing with the university
- The student is approved to graduate after filing a petition for graduation courses numbered in 500's and above are graduate courses.

CONCENTRATION AREA AND CAREER PLANNING

All graduate students pursuing engineering degrees at CSBU are advised to plan for their studies and choose a concentration area early. Upon completing 12 credits in graduate course work, the student must choose a concentration area. Academic counselors are on-hand to assist the students to make their study plans and assess the technology trend and job market. The students are encouraged to utilize the online e-career center and work when they are ready for such a pursuit.

MASTER'S PROJECT/THESIS

Master's degree students interested in research and development work may choose to take a 3 credits master's project or a 6-unit master's thesis to fulfill the requirement in either the concentration area or elective course work. The information packages concerning the project/thesis requirements and guidance are distributed to the enrolled students in the project/thesis orientation workshops held twice each semester. The information is also posted on CSBU's website in the CSBU online service center.

ADVISOR

A faculty member serves as the project/thesis advisor to offer guidance to the student. The master's thesis course may be registered as a two-part course, taking a total of two semesters to complete. A student unable to complete the project/thesis in the semester he/she is enrolled in the course is required to continue to enroll in the course the following semester until completion of the project or thesis. The student receives either an "s" or letter grade for satisfactory performance and earns the credits
or an "NP" grade for unsatisfactory performance without earning credit in each semester the project is being conducted. Extra credits earned for repeatedly taking the project/thesis course cannot substitute for other course requirements.

Master of Science in Electrical Engineering (MSEE):

BACKGROUND PREPARATION
Students admitted in to the MSEE degree program are required to have the following Background preparation. A student with any deficiency is required to clear it by either (1) taking the course at CSBU and earning a grade of at least C or higher or (2) taking and passing a proficiency exam on the subject. The student is advised clear all deficiencies before attempting to enroll in graduate level courses.

1. **ELECTRICAL ENGINEERING SUBJECTS:**
   - Circuit theory and analysis (EE400, EE420)
   - Digital circuits and logic design (EE450)

2. COMPUTER SCIENCE SUBJECTS:
   - Programming language and logic (CS414); Students choosing Embedded Engineering concentration also require a background in CS470.
   - Unix/linux operating system (CS440); Students choosing Embedded Engineering concentration also requires a background in CS490.

3. **MEZZANINE COURSE:** (Students with a back ground deficiency can take these courses and earn graduate credits)
   - EE515

MSEE Curriculum

A minimum of 36 semester units of graduate study are required for the MSEE Program. A maximum of four (4) 4xx courses (400 level courses with a designation taken as elective courses) are allowed to count towards graduation credits. The student must meet prerequisite requirements when taking any of the following courses.

1. Basic Courses (12.0 Credits)

The required courses emphasize understanding the mathematics and modeling Techniques for circuits and other engineering systems, and the design of Modern Computers. A student must take the following two courses to complete the required Graduate course requirement. These two courses cannot be used to meet concentration course work requirements.

EE521 Advanced Engineering Analysis
EE524 Advanced Computer Organization and Structure
EE562 Application Specific Integrated Circuit Design
EE585 Image Processing and Applications

2. Area of Concentration (12.0 Credits)

In addition to the two required graduate courses in section I, a student must select an area of concentration and complete at least 12 credits (4courses) listed in one Chosen concentration area. This is to ensure the students competence in a selected area. As new courses are also offered between publications of school catalogs, the Students are advised to refer to the “Concentration Area Course

Tables published with each release of the semester class schedule to select courses for meeting the Concentration area requirements.

Area A, Chip Design and VLSI

Required Courses:

EE525	Digital IC Design
EE536	Advanced Digital IC Design
EE547	Analog/Mixed Signal IC Design
EE558	VLSI Physical Design-Place and Route

3. Courses for Breadth of Study (6.0 Credits)

The student is required to take at least 6 Credits in graduate course work outside the chosen concentration area to broaden his/her knowledge in one or two application areas. For example, a student choosing the chip design and VLSI concentration is encouraged to select one or two courses in the DSP applications such as the course EE580.Courses for breadth of study may be at 400 levels with a designation or 500 level and above. The student must observe the limits on the number of 400 level courses with a designation.

4. Electives (6.0 Credits)

The student may elect graduate-level courses in any discipline, in or outside the Chosen concentration area, to meet the elective requirements. Elective courses May also include mezzanine courses taken to meet the background requirements for the chosen concentration area. The student must observe the limits on the Number of 400 level courses with a designation.

Mezzanine Course for Program Requirement:

Students admitted with a background deficiency in microprocessor structure may Take the course "EE515 Microcomputer Structure and Programming" at CSBU. Credit earned can be counted as elective credit towards the MSEE graduation Requirements.

***** Other Background Requirements for The Concentration Area:
Each concentration area requires certain 400 level background courses. Students May earn credit towards the degree, if observing the limit for the number of 400Level courses for the program, by taking these courses, such as EE455, EE470, EE481.

MSEE TOTAL REQUIREMENTS (36 credits)

Electrical Engineering Course Description

EE400 CIRCUIT THEORY-I (3.0 Credits)
This course is the first of a 2-part series on the fundamentals of electrical circuits. Topics include analysis of circuits containing resistors, capacitors, inductors, and controlled sources; Kirchoff's Laws; simple resistive circuits; node-voltage method, mesh-current method; Thevenin's and Norton's theorems; operational amplifier and its applications; transient analysis of first and second order circuits, and SPICE simulation.
Prerequisite: instructor's consent

EE420 CIRCUIT THEORY-II (3.0 Credits)
This course is the second of a 2-part series on electrical circuits that covers advanced topics, including sinusoidal steady-state circuit analysis using phases, power calculations in AC circuits, balanced three-phase circuits, Laplace transform and its application in transient circuit analysis, frequency select circuits and filters, Fourier series and Fourier transforms, and two-port networks.
Prerequisite: EE 400

EE432 ANALOG CIRCUIT DESIGN (4.0 Credits)
This course provides students with the opportunity to use the knowledge and experience acquired in previous circuit courses to further understand the design accept of analog circuits and conduct analysis and design of differential amplifiers, current mirrors, frequency response of electronic circuits, feedback circuit analysis, output stages, integrated circuits, filters and oscillators.
Prerequisite: EE420

EE450 LOGIC DESIGN (4.0 Credits)
This course is intended to provide the students the opportunity to use the knowledge and experience acquired in previous digital circuit courses to further understand the design aspect of digital integrated circuits and devices. Hands-on design experience is provided in digital and logic circuits and their applications. The course focuses on various logic design techniques to design a variety of combinatorial and sequential circuits. Timing considerations are analyzed for asynchronous and synchronous circuit designs with emphasis on state machine design approaches. Students will be introduced to modern design techniques using HDL languages and concentration on verification of circuit designs. Simulation tools include Alters MAX + plus II, Xilinx various projects.
Prerequisite: Instructor's consent

EE465 SIGNALS AND SYSTEMS (3.0 Credits)
This course is an introduction to basic concepts and principles of signals and systems. Both analog and digital signal processing techniques will be covered. Topics include analog signals and systems, digital signals and systems, LTI systems, Fourier transform, Z-transform, FFT, system stability, digital filter design, Network. Matlab software will be used to implement some of the DSP algorithms.
Prerequisite: Instructor's consent

EE470 DIGITAL SIGNAL PROCESSING (3.0 Credits)
This course is a study of the concepts in deterministic and statistical techniques for describing, analyzing, and characterizing generic signals and their applications. Topics include signal processing, continuous and discrete Fourier analysis, and fundamentals of methods. Additional coverage includes the fundamentals of the algorithms and computational methods for digital FIR/IIR filter design and basic signal analysis techniques. Simulation exercises using Matlab / C Language are required.
Prerequisite: EE465

EE481 VERILOG HDL AND DIGITAL DESIGN (3.0 Credits)
This course develops the students' ability to design the basic building blocks of modern digital systems and provides them with a fundamental knowledge of the state-of-the-art design methodology, design considerations, and verification strategies for complicated digital hardware design. Topics include Verilog HDL basics, simulation, Synthesis of digital systems using Verilog HDL. The students practice using the tools for design projects on UNIX system or Windows system. Mentor Modelsim for HDL Simulation, Cadence Verilog-XL, and Silo III Verilog Simulator from SimuCAD are available in the Labs. Hands-on practices are required.
Prerequisite: EE450

EE490 APPLICATIONS OF OPERATIONAL AMPLIFIER AND ANALOG INTEGRATED CIRCUITS (3.0 Credits)
This course emphasizes board level analog circuit analysis, design, and simulation. Topics include fundamentals of operational amplifier and its applications, active filters, stability of the feedback circuit, linear and switching regulator, and phase lock loop. Pspice and off-the-shelf analog IC are used by the students for circuit design and design verification. Hands-on practices and projects are required.
Prerequisite: EE432

EE515 MICROCOMPUTER STRUCTURE AND PROGRAMMING (3.0 Credits)
This course is designed for the students to learn microprocessor architecture and gain hands-on experience with at least one popular microprocessor. Topics include microprocessor architecture and development tools - using a popular microprocessor for case study, programming with ASM/C for exercises; instruction set, hardware feature, I/O and timer, interrupt, and a survey of other microprocessors. Hands-on experience in microcomputer programming and applications through laboratory projects is required.
Prerequisite: EE450

EE520 MICROCONTROLLER INTERFACES AND APPLICATIONS (3.0 Credits)
This course is designed for students to get practice in microcontroller-based digital systems design with emphasis on interfacing and data processing. Topics include interfacing, A/D and D/A conversions, data acquisition, input devices, output devices, displays, and application firmware programming. This course is project heavy and students will complete projects, including documentation, prototyping, demonstrations of functionality, presentation, and implementation evaluation.

Prerequisite: EE450

EE521 ADVANCED ENGINEERING ANALYSIS (3.0 Credits)
This course is designed to provide graduate students in Electrical Engineering with the mathematics background and modeling techniques needed to analyze electronic circuits and other engineering systems used in contemporary engineering and technology. In addition, methods will be introduced to describe and analyze systems of importance in emerging technologies, e.g. nanotechnology. Analytical, numerical, and computational approaches will be used. The emphasis throughout this course will be on applications. Topics will include: probability, stochastic methods, Monte Carlo simulation, Laplace transform, Dirac delta function, Orthonormal functions, Fourier analysis, Z transform, partial differential equations, the importance of nanometer length scale, Schrodinger wave equation, quantum tunneling, and application of wave functions in nanotechnology.
Prerequisite: Instructors consent

EE524 ADVANCED COMPUTER ORGANIZATION AND STRUCTURE (3.0 Credits)
This course is designed to further investigate modern computer design. Topics include an in-depth study of multiprocessor architecture and interconnection networks, pipeline, data flow, algorithm structures, memory system design, cache memory design, and a comparison of the performance and design among various computer architectures. Hands-on project experience is required
Prerequisite: EE515

EE525 DIGITAL IC DESIGN (3.0 Credits)
This is the first of the VLSI design series. The course begins with an introduction to state-of-the-art CMOS VLSI engineering with emphasis on the basic CMOS VLSI design principles and methodologies. Topics include basic MOSFET theories and characteristics, CMOS semiconductor fabrication processes, sub-micron design rules, combinational and sequential CMOS logic gate design styles, data path, interconnection, power and clock distribution, array and memory design. Widely used industry standard tools, such as Cadence's Opus, Composer, Virtuoso, Avant's HSPICE and Mentor's Calibre will be used for all homework assignments and design projects.
Prerequisite: Instructor's Consent or EE450

EE536 ADVANCED DIGITAL IC DESIGN (3.0 Credits)
This course is a continuation of the course EE515 and is designed to cultivate students˘ ability to design a Standard Cell Library, Data path and other special circuits that can be used as intellectual properties (IP) building blocks for ASIC, SOC (system on chip) and DSP (digital signal processing) applications. In addition to the design subject, students also learn how to generate different views of the circuits to facilitate system integration with various CAD tools for logic synthesis and physical implementations. Topics include standard cell design and characterization, technology mapping, design rules, layout, data path synthesis, memory compiler, IP development and architecture trade-off. Modern CAD tools such as Synopsys, OPUS, Composer, Virtuoso, HSPICE and Mentor’s Calibre will be introduced and used for homework assignment and projects.
Prerequisite: EE525

EE547 ANALOG/MIXED SIGNAL IC DESIGN (3.0 Credits)
This course is designed to cultivate the student ability to design comes analog integrated circuits. Topics include review of opamp networks, frequency response to Linear integrated circuits, level sensing amplifiers, phase detectors, voltage controlled oscillators, charge pumping techniques, and A/D,D/A converters, HSPICE, are used for assigned homework and projects.
Prerequisite: EE536

EE558 VLSI PHYSICAL DESIGN-PLACE AND ROUTE (3.0 Credits)
This course is the third in the VLDI Design series and it introduces ASIC place and route. The course introduces the students to state-of-the-art physical design automation tools and techniques. Topics include design flow, library review, tool graphical interface, floor planning, power planning, timing driven placement, static time analysis (STA), CT-Gen, special routing, final routing, engineering change order (ECO), and run batch mode jobs. Hands-on exercises and projects are required.
Prerequisite: Senior standing or Instructor's Consent

EE562 APPLICATION SPECIFIC INTEGRATED CIRCUIT DESIGN (3.0Credits)
This course is designed for students who intend to become logic designers using HDL based design methodologies. Topics include ASIC/CPLD/FPGA Library modeling, Cell characterization, static timing analysis, place and route algorithms design for testability, fault modeling, industry standard formats for design information interchange, and a survey of the most popular EDA tools. Industry grade design tools such as Synopsys Design Compiler, Cadence Verilog-XL, Synopsys Design Time (under dc_shell), Synopsys Prime Time, Cadence Silicon Ensemble, Mentor Calibre LVS/DRC, and Synplicity Synplify are used for homework assignments and projects
Prerequisite: EE471

EE565 HIGH-SPEED DIGITAL SYSTEM DESIGN (3.0 Credits)
This course offers the concepts of advanced technology in high-speed digital system design. It focuses on the issue of signal integrity which is most critical in such system design. Topics include an overview of digital system engineering, modeling and analysis of interconnections, circuit analysis, power distribution in high-speed systems, noise in high-speed digital systems, Buffering model, digital timing analysis, and design methodologies.
Prerequisite: EE420

EE576 POWER/SIGNAL INTEGRITY IN ADVANCED IC PACKAGING AND PCB DESIGN (3.0 CREDITS)
This course is an extension of the subjects covered in EE565.It covers the concepts of advanced Technology in high speed digital system design with emphasis on the applications of advanced
PCB and high speed packaging design. The course objective is to develop the students' abilities to work on high speed PCB and packaging design.
Prerequisite: EE565

EE581 DATA COMPRESSION (3.0 Credits)
This course surveys current image, data and voice compression standards and studies key components in image, data and voice compression. The course emphasizes minimum redundancy coding, Huffman coding, arithmetic coding, statistical modeling, dictionary-based compression, sliding window compression, LZ78 compression, speech compression, lossy graphics compression, JPEG, wavelet methods, and archiving package. Matlab programming will also be introduced.
Prerequisite: EE470

EE585 IMAGE PROCESSING AND APPLICATIONS (3.0 Credits)
This course offers the fundamentals of image processing. Besides introducing basic concepts and principles, the course takes a practical approach to emphasize various applications of digital image processing. Topics include image fundamentals, image transformations, image enhancement image restoration, information technology, data compression, image segmentation, image presentation and pattern recognition and interpretation. Matlab software is employee for implementing numerous algorithms.
Prerequisite: EE581

EE590 DIGITAL SIGNAL PROCESSOR DESIGN AND IMPLEMENTATION (3.0 Credits)
This course is designed to give advanced graduate students in engineering a thorough examination of all the design considerations of fixed-point (integer) digital signal processors as well as develop their abilities to design a general fixed-point digital signal processor. Topics include a review of general DSP algorithms (FIR, IIR, DFT, IDFT, DCT, IDCT, wavelet), processor architectures, address generation schemes, memory structures, instruction set definition and encoding, single and multiple instruction repetitions, and minimum and maximum searching. Students will design a 16-bit fixed-point digital signal processor which requires incorporation of all design considerations taught in this course.
Prerequisite: EE536

EE595 INTRODUCTION TO NANOTECHNOLOGY (3.0 Credits)
This course is a general introduction to nanotechnology, open to all graduate students. The course will begin with an overview of the field of nanotechnology. The following general areas of nanotechnology, illustrating the scope and depth of the field, will be introduced: electronics and systems, life sciences and medicine, materials and technologies, and business and ventures. Within these general areas, specific topics will be introduced, at a basic level, including: nano electronics, photonics, fabrication, and systems; biosensors, nanotechnology in health and medicine; imaging; nano materials and devices, energy technology and applications, environment and society, nanoscale characterization; business, investment, and intellectual property. Extensive use will be made of audio-visual presentations. The course will include class field trips to nanotechnology companies and research laboratories in the San Francisco Bay Area.
Prerequisite: A general knowledge of the sciences or engineering or business

EE600 ELECTRONS, PHOTONS, AND NANOTECHNOLOGY (3.0Credits)
Electrons and photons play a key role in nanotechnology. This course introduces

the basics of the application of electrons and photons to nanotechnology. Topics include: Introduction and motivation. Why are electrons and photons so important in nanotechnology? The electron: basic electron properties, electrons as waves and their description and application. The photon: basic photon properties, particle and wave aspects. Hands-on computer simulation in nanotechnology, introduction to instruments and techniques, dedicated to the characterization and manipulation of nanostructures, exploiting the basic properties of electrons and/or photons. Electron interactions, application of electron properties in microscopes to study nano devices, application of electron spin property in function of nano devices, photon interactions. Using of photon properties in microscopes to study nano devices, including photon spin property. Combined use electrons and photons to study non-volatile memory devices, impacting on the storage device industry. The course will include class visits to nanotechnology companies, and to state-of-the-art nanotechnology centers at the national research laboratories and universities in the San Francisco Bay area.
Prerequisite: EE595

EE607 MASTER'S PROJECT
This course is designed to develop the creativity of graduate students in Electrical Engineering. Students will design a project under the close supervision of a project advisor from the engineering faculty. The design project must be open-ended, and the design approach must employ modern design techniques and methodologies. Completion of the design project entrails: 1) formulation of a design problem statement including realistic constraints such as economic factors, safety, and reliability issues, 2) design specifications 3) consideration of alternative solutions 4) manufacturing procedures, and 5) Operation instructions. The research topic and proposal must be approved by the project advisor. Format of the report must be approved by the project advisor and tech writer. Upon completion of the project, the student is required to conduct and open-forum presentation of the project.

EE609A MASTER'S THESIS - I
This is the first part of a 2-part master's thesis course designed for a graduate student in the Electrical Engineering program who plans to pursue his/her research interests in depth. Each part requires one trimester's effort to complete half of the entire project work. In this first part, the advisor will assist the student to identify the research topic, shape research ideas, and define the research objectives and scope. The student then performs the following: topic studies, identifying software and/or hardware requirements, defining the project objectives and procedures, writing a project proposal and submitting it to the administration after obtaining his/her advisor's approval, working on research and implementation of the project, and documenting findings. Regular meetings with the advisor are required.

EE609B MASTER'S THESIS - II
This is a continuation of the first part of the master's thesis course. At the beginning of the semester, the student should draw a conclusion on the research and development work for the project and begin to write a thesis report following the required format. The student should make and analysis of the project work and results. Through this process, the student will gain in-depth knowledge of the selected subject and develop independent thinking and research capabilities. The report must be approved by the advisor and a tech writer. Upon completion of the project, the student is required to conduct an

open-forum presentation of the project.

EE624 ADVANCED VLSI PHYSICAL DESIGN-PHYSICAL SYNTHESIS AND LOW POWER DESIGN (3.0 Credits)

This course is designed to further investigate ASIC front-to -back design automation. The course aims to develop the students' design ability in ASIC by using state-of-the-art EDA backend design tools and methodology (such as Cadence SE-PKS). It also introduces concepts in advanced industrial deep submicro backend design. Topics include library review, floor planning in SE, physical synthesis, CTPKS, timing closure, RCextraction, back annotated from back to front, non-default routing rule implementation, double-cut-via implementation for 0.13u and below technology, shielding, and route. Hands-on practices are required.

Prerequisite: EE558

EE691 MAGNETORESISTIVE RANDOM ACCESS MEMORY (3.0 Credits)

This course is intended for advanced graduate students of electrical engineering. In this course the specific example of a leading candidate for next generation non volatile memory MRAM storage cell devices. Topics will include multilayer Magnetic nanostructures, exchange bias, ferromagnet and anti ferromagnet materials, magnetic domains, magnetic thin films, ultra fast manipulation of magnetization in the multilayer magnetic nanostructure by spin polarized electron currents and magnetic circular dichroism techniques.

Prerequisite: instructor's consent

Master of Science in Computer Science (MSCS)

BACKGROUND PREPARATION

Students admitted in to the MSCS degree program are required to have the following background preparation. A student with any deficiency is required to clear it by either (1) taking the course at CSBU and earning a grade of at least C-or higher or (2) taking and passing a proficiency exam on the subject. The student is advised to clear all deficiencies before attempting to enroll in graduate level courses.

1. **ENGLISH/COMMUNICATION:**
   - English communication (one of the following: CS407or a college English course);

2. **COMPUTER SCIENCE SUBJECTS:**
   - Programming languages and Data structures (CS414, CS470);
   - Operating systems (CS440, CS490);

3. **ELECTRONIC SUBJECTS:**
   - (EE400, EE420);

4. **MEZZANINE COURSES:**
   (Students with a background deficiency can take these courses and earn graduate credits)
   - Database Design (CS527)
   - Computer networks (CS530)

MSCS CURRICULUM

A minimum of **36 semester units of graduate study** are required for the MSCS program. A maximum of four (4) 4xx courses (400 level courses with a designation taken as elective courses) are allowed to count towards graduation credits. The student must meet prerequisite requirements when taking any of the following courses.

1.) Basic Courses (12.0 credits)

The required courses emphasize understanding of (1) the principles and architecture of Computer networks and (2) the design of modern operating systems. A student must take the following two courses to complete the required graduate course requirement. These two courses cannot be used to meet concentration coursework requirements.

CS511	Computer Architecture
CS527	Database Design
CS543	Advanced Computer Networks
CS546	Operating System Design

2.) Area of Concentration (12.0 credits)

In addition to the three required graduate courses in section I, a student must select an area of concentration and complete at least 12 units (four courses) listed in one chosen concentration area. This is to ensure the students

competence in a selected area. As new courses are also offered between publications of school catalogs, the students are advised to refer to the "Concentration area courses tables published with each release of the semester class schedule to select courses for meeting the concentration area requirements.

Area A. Internet Technology and Digital e-Business Systems

Required courses:

CS560	NET Web Programming
CS572	Advanced Java Programming
CS542	Software Engineering
CS570	Algorithms

3.) Courses for Breadth of Study (6.0 credits)
The student is required to take at least 6 units in graduate course work outside the chosen Concentration area. The courses may be at 400 level or 500 level And above. The student must observe the limits on the number of 400 level courses with a designation.

4.) Electives (6.0 credits)
The student may elect graduate-level courses in any discipline, in or outside the chosen Concentration area, to meet the elective requirements. Elective courses may also include Mezzanine courses taken to meet the background requirements for the program and/or For the chosen concentration area. The students must observe the limits on the number of 400 level courses with a designation.

Mezzanine Courses for Program Requirement

Students admitted with a background deficiency in (1) database design and/or (2) computer networks must take the courses (1) "CS527 database design" and/or (2)" CS530 computer networks" at CSBU. Credit earned can be counted as elective

* Other background requirements for the concentration area:
Each concentration area requires certain 400 level background courses. Students may earn credit towards the degree, if observing the limit for the number of 400 level courses for the program, by taking the courses such as CS540.

MSCS TOTAL REQUIREMENTS (36credits)

Computer Science Course Description

CS 360 COMPUTER FUNDAMENTALS (4.0Credits)
This is an introductory computer literacy course introducing the students to the basics of computer hardware structure, the World Wide Web, and MS Windows software tools. Topics include introduction to computer components, input/output, data storage, the Internet and the WWW, operating systems, data management and databases, software program development and programming languages, and ethics for technical professionals. Students also learn to use the latest Microsoft Office tools Word, Excel, Access, Powerpoint, MS Visual Basic, and the use of the Internet and browsers. Hands-on exercises are required.

CS 407 PROFESSIONAL DEVELOPMENT (2.0 Credits)
This course instructs the student to develop his/her professional career. Topics cover personality assessment, professional ethics, understanding the business professional world, recognizing company culture and organizational structure, career stages and paths, resume preparation, and interview techniques and business report/proposal writing.
Prerequisite: Placement by English exam or successful completion of advanced English as Second Language classes.

CS 414 PROGRAM DESIGN AND ANALYSIS IN C (4.0 Credits)
This course is designed to teach C language syntax rules and the analysis of a structured programming language, with emphasis on practical applications in engineering and business problems. Methods of testing and debugging well-structured programs in C are also covered. Topics include problem specification and analysis, writing-editing-compiling-linking a C program, data types, operators and expressions, selection and repetition, arrays, pointers, functions, text files, dynamic memory allocation, strings, structures and unions, binary files, and bitwise manipulation and preprocessor directives. Hands-on exercises are required and the weekly lab session is an integral part of this course.
Prerequisite: CS360

CS 440 INTRODUCTION TO UNIX/LINUX (4.0 Credits)
This course is designed to familiarize the students with the UNIX/Linux environment. Topics include concepts of the UNIX/Linux operating system, Shell commands, Visual editor, file manipulation and securities, UNIX utility commands, Shell features and environment, online manual, controlling user processes and managing jobs, introduction of Regular Expression and its usage with grep, sed, and awk UNIX power utilities, basic Shell programming techniques, large file management, and the user programming environment customization. Hands-on exercises are required.
Prerequisite: CS360

CS 470 OBJECT- ORIENTED PROGRAMMING IN C++ (3.0Credits)
This course is designed to develop the students' abilities to design, code, and document application programs using object-oriented design and analysis concepts and methodology. Emphasis is on establishment of design objectives, criteria and specifications, processes of synthesis, analysis, construction, testing, and evaluation of open-ended problems. Topics include an introduction to general object-oriented programming as implemented in C++, data types, expression, statements, functions, program scope, run-time memory allocation,

function overloading, template functions, class mechanism, derivation, inheritance, and migration from C to C++. Labs may accompany lectures in partial class meetings during the semester. Hands-on exercises are required.
Prerequisite: CS414

CS 490 INTRODUCTION TO OPERATING SYSTEMS (3.0 Credits)
This course is designed to introduce students to basic concepts of modern operating systems, topics include processes, threads, microkernel, concurrency, memory management, file system. Hands on exercises are required.
Prerequisite: CS360

CS 511 COMPUTER ARCHITECTURE (3.0 Credits)
This course focuses on the techniques of quantitative analysis and evaluation of modern computing systems, such as the selection of appropriate benchmarks to reveal and compare the performance of alternative design choices in system design. The emphasis is on the major component subsystems of high performance computers: Pipelining, instruction level parallelism, memory hierarchies, input/output, and network-oriented interconnections. Students will undertake a major computing system analysis and design project of their own choosing.
Prerequisite: Instructor's Consent

CS 527 DATABASE DESIGN (3.0Credits)
This is the first of a series designed to teach relational database concepts, design, and applications. Topics include database architecture, relational model, structured query language (SQL), data manipulation (DML), data definition language (DDL), database design, ER modeling, database normalization, denormalization, and physical database design. Popular database systems, such as Oracle and Microsoft SQL server, are used for hands-on exercises and projects.
Prerequisite: CS414 or Instructor's Consent

CS 530 COMPUTER NETWORKS (3.0Credits)
This course is designed to give students a global picture of computer networks. Topics include network layered models (OSI, TCP/IP), data communication basics, circuit switching, packet switching, routing and internetworking. Hands-on exercises are required.
Prerequisite: CS490

CS 540 JAVA PROGRAMMING AND INTERNET APPLICATIONS (3.0Credits)
This course introduces students to the Java language, programming with object-oriented construct, GUI design and graphics programming and core Java libraries. Students will learn Java language basics such as syntax and classes, inheritance, interfaces, reflection, graphics programming, event handling, user-interface components with Swing, Java applets, exception handling, stream, and files. Hands-on exercises are required.
Prerequisite: CS470

CS 542 SOFTWARE ENGINEERING (3.0Credits)
This course is designed to demonstrate the engineering approach to the development of large, high-quality software projects. Topics include software life cycle, development process, requirement specifications, design and testing techniques, verification and validation, and software management. Students learn to use project management tools, principles, and environment to facilitate

development of software programs/systems. Hands-on exercises and projects are required.
Prerequisite: CS470

CS 543 ADVANCED COMPUTER NETWORKS (3.0 Credits)
This is the sequel to CS520, Computer Networks, and is designed for an in-depth study of computer networks. Emphasis is on modern Internet technologies and implementations. Topics include a review of computer networks, OS reference model, a study of emerging Ethernet technologies (Fast, Gigabit), client and server implementation with socket programming, local and wide area networks, TCP/IP, routing, network protocol and architecture, Internet protocol, and IP addressing. Projects are required.
Prerequisite: CS530

CS 546 OPERATING SYSTEM DESIGN (3.0 Credits)
This course offers graduate students an in-depth understanding and hands-on experience in modern operating system design and implementation. Topics include process, memory, file system, I/O, deadlocks, case studies of operating system implementations, modern distributed and network system architectures, communication and synchronization in distributed systems, threads and processor allocation, scheduling in distributed operating systems, distributed file systems, and case studies of modern distributed operating system design. Projects are required
Prerequisite: CS490

CS 550 UNIX/LINUX SYSTEM PROGRAMMING (3.0Credits)
This course is designed for students to gain fundamental knowledge of and hands on experience with programming in unix/linux environment. students will learn to program in c with unix/linux system calls and other advanced topics such as unix file system, process control, signals and inter process communications. upon completion of this course, students should be able to develop real world unix/linux applications.
Prerequisite: CS440

CS 555 UNIX/LINUX NETWORK PROGRAMMING (3.0Credits)
This course is designed for graduate students to gain hands on experience in unix/linux programming. The students will learn to develop unix/linux network applications using a number of unix/linux network programming interface techniques including sockets, XTI ,RPC. Topics include: an overview of transport layer, TCP sockets, UDP sockets, threads and client server design, XTI, RPC and Streams.
Prerequisite: CS440

CS 560 NET WEB PROGRAMMING (3.0Credits)
This course provides students with the knowledge and skills needed to develop dynamic web-based applications using ASP.NET and gain an understanding of the new architecture behind ASP.NET. Topics include creating ASP.NET pages, creating Web custom controls and Web user controls, using validation controls and composite controls, using ADO.NET to access data from various data sources, configuring and securing a Web application, state management, error handling and debugging, and migrating existing web applications to ASP.NET.
Prerequisite: CS470

CS 567 NET WINDOWS PROGRAMMING (3.0Credits)
The goal of this course is to provide students with the knowledge and skills they

need to develop C# applications and components for the Microsoft .NET Platform, including Visual C# .NET Windows application development with Windows Forms and controls; user interfaces and navigation; error handling and debugging; data binding; consuming and manipulating data; components and .NET assemblies; Windows services; Remote; testing and debugging; application deployment and configuration. Hands-on practice is required.
Prerequisite: CS470

CS 570 ALGORITHMS (3.0Credits)
This course provides an in-depth analysis and efficient use of algorithms to solve problems. Well-structured programs are studied; modular, top-down design is emphasized. Topics include the use of data structures techniques to design efficient algorithms and analyze their complexity, efficient implementation of combinatorial algorithms, sorting, searching, and geometric problems, and branch and bound algorithms.
Prerequisite: CS360

CS 572 ADVANCED JAVA PROGRAMMING (3.0Credits)
This course is designed to give the students an in-depth understanding of Java programming techniques. The course focuses on advanced Java language features and packages which are essential for building a variety of application architectures. Topics include Java techniques of WAP, XML, JNI, thread, network programming, Servlet, JSP, JDBC, and internalization. Upon completion of this course, the students should be well prepared to create enterprise-wide, Java-centric solutions to client/server problems involving Java and networks. Each technology topic will cover its uses, implementation, and language issues. Students are required to implement a project for each Java technique. Hands-on exercises are required.
Prerequisite: CS540

CS 580 DATABASE ADMINISTRATION (3.0Credits)
This course provides an in-depth understanding of the Oracle Database Management System. Emphasis is on the latest Oracle database architecture, database configuration and administration. Topics include logical/physical database layout, database server processes, database creation, various database physical objects; client/server configuration, multi-threaded server configuration, database storage management, database security, database utilities, database monitoring, partitions, and database backup/recovery methods. Hands-on practices are required.
Prerequisite: CS527

CS 587 ADVANCED DATABASE DESIGN AND DEVELOPMENT (3.0Credits)
This course is intended for graduate students to further explore database server development and database tuning. The course specifically details procedural extensions to SQL to develop stored procedures, functions, packages and database triggers. In addition, it covers database performance tuning from application development point of view by exploring query optimizer, database hints, and various database access methods. Hands-on exercises are required.
Prerequisite: CS527

CS 588 DATABASE AND INTERNET SERVER PROGRAMMING (3.0Credits)
This course introduces current client/server data access concepts on the Internet. It covers the fundamental concepts of the 3-tier model, Internet database access, and major tools and techniques utilized in application development. Topics

include N-tier model, JDBC with database applications, Java Servlet, JSP and JavaBean, WML, and XML. Hands-on exercises are an integral part of the course.
Prerequisite: CS527

CS 607 MASTER'S PROJECT (3.0 units)
The course is designed to develop the creativity of graduate students in Computer Science through the exercise of the design effort on a self-selected project. The design project must be open-ended, whereas the design approach must employ the modern design techniques and methodologies in the related fields. Completion of the design project entails 1.) Formulation of a design problem statement including realistic constraints such as economic factors, safety, and reliability issues, 2.) Design specifications, 3.) Consideration of alternate solutions, 4.) Manufacturing procedures and 5.) Operation instructions. The research topic and proposal must be approved by the project advisor. The report format must be in accordance with CSBU's Project Style Guide and be approved by the advisor and tech writer. Upon completion of the project, the student is required to conduct and open-forum presentation of the project.

CS 609A MASTER'S THESIS - I (3.0 units)
This is the first part of a 2-part master's thesis course designed for a graduate student the Computer Science program who plans to pursue his/her research interests in depth. Each part requires one trimester's effort to complete half of the entire project work. In this first part, the advisor will assist the student to identify the research topic, shape research ideas, and to define the research objectives and scope. The student then performs the following: topic studies, identifying software and/or hardware requirements, defining the project objectives and procedures, writing a project proposal and submitting it to the administration after obtaining his/her advisor's approval, working on research and implementation of the project, and documenting findings. Regular meetings with the advisor are required.

CS 609B MASTER'S THESIS - II (3.0 units)
This is a continuation of the first part of the master's thesis course. At the beginning of the semester, the student should draw a conclusion on the research and development work for the project and begin to write a thesis report following the required format. The student should make and analysis of the project work and results. Through this process, the student will gain in-depth knowledge of the selected subject and develop independent thinking and research capabilities, The report must be approved by the advisor and a tech writer. Upon completion of the project, the student is required to conduct an open-forum presentation of the project.

CS 647 XML AND WEB SERVICE DEVELOPMENT (3.0Units)
Markup language (XML) is rapidly becoming the standard information description language, and has been used in almost all areas related to computer and information technologies, such as Internet, semiconductor, bioinformatics, etc. Its usage will continuously grow. Web Services refer to the infrastructure that supports a rapidly emerging style for developing applications that rely on the Internet and WWW for portions of their functionality.
Prerequisite: either java or c#

CS 688 NETWORK SECURITY IN WIRELESS SYSTEMS (3.0Units)
This is the third in the Network Security series. A secure network is the fundamental requirement for network communication. Network security issues have become ever more important for any organization with network systems.

This class mainly addresses the security issue in accessing the network, including the security in wireless access. Many new proposals and technology have been developed in this field. The objectives of the class are to teach students the fundamentals in cryptography, the concept of security, and the practical use of virtual private networks (VPN). Topics include IPSec (IP Security), Web Security, VPN, and wireless network security. Some important RFCs will also be covered for the students to understand its development process in the network industry.
Prerequisite: CS543

School of Green Energy

Purpose

The main purpose of the School of Green Energy (SGE) is to create manpower through education in renewable energy technology and management, as well as fulfill educational elements that build the ability to think, analyze and evaluate. Currently SGE offers master degree program in Solar Power Technology and Management with concentration area in solar photovoltaic technologies. By 2009 the school hopes to add more specializations in areas such as fuel cell systems and technologies, and bio-fuels and bio-energy. With a friendly school atmosphere and the unique multi-discipline program, our graduates are well prepared as future leaders in the rapidly growing green-energy industry.

Faculty

Our faculty members are first and foremost committed to facilitating and communicating with students for the sake of each student's success. They possess the following qualities: advanced degrees earned in engineering and science disciplines, high-tech work experiences, and enthusiasm in teaching and helping the students. Green-energy technology is not a homogeneous discipline; it requires many special talents. Some faculty members in the school are goal-oriented designers, concerned with teaching students how to solve problems, how to synthesize relevant information and ideas and apply them in a creative, feasible design. Others are method-oriented scientists, using the techniques of their disciplines in their teaching and research to investigate various natural and artificial phenomena.

Objectives

The school strives to foster and promote an environment conducive to teaching and learning as well as excellence particularly in green-energy technologies. The objectives of the school are as follows:

- To develop program of study relevant to industrial and national needs
- To produce skilled graduates in green-energy technology and management with a theoretical background and practical experience
- To provide relevant laboratory experience throughout each program as an integral part of the education, emphasizing extensive use of simulation and hands-on practice in the learning process
- To train graduates who have strong fundamentals in relevant areas but at the same time are competent in his or her chosen field of study
- To equip the students with the necessary knowledge and skills in problem solving and analytical thinking

- To provide each student a goal-oriented education by tailoring each student's study plan based on the student's background and interests.
- To provide a well-rounded and balanced undergraduate education through required studies in engineering, natural science, communications, and social science.

Graduation Requirements

A minimum of 36 credits of graduate-level course work is required for the master degree program, in which 18 credits are from core courses, 9 from electives, and 9 from project/thesis. Students must also makeup for any background deficiencies by taking additional courses. A grade of "B-" or better must be earned in all core courses, a grade of "C-" must be earned for all elective courses, and a grade of "pass" is required for project/thesis. GPA 3.0 or better is required, and students must be in good standings with the university. After fulfilling the requirements stated above, the student may file a petition for graduation and if approved, may graduate.

Concentration Area and Career Planning

All graduate students pursuing engineering or management degrees at CSBU are advised to plan for their studies and choose a concentration area early. Upon completing 18 credits in core course work, the student must choose a concentration area. Academic counselors are on-hand to assist the students to make their study plans and assess the technology trend and job market. The students are encouraged to utilize the online e-career center and work when they are ready for such a pursuit.

Advisor

A faculty member serves as the project/thesis advisor to offer guidance to the student. The master's thesis course may be registered as a two-part course, taking a total of two semesters to complete. A student unable to complete the project/thesis in the semester he/she is enrolled in the course is required to continue to enroll in the course the following semester until completion of the project or thesis. The student receives either an "s" or letter grade for satisfactory performance and earns the credits or an "NP" grade for unsatisfactory performance without earning credit in each semester the project is being conducted. Extra credits earned for repeatedly taking the project/thesis course cannot substitute for other course requirements.

Master of Science in Green Energy Technology (MSGE)

Background Preparation

Students admitted in to the MSGE degree program are required to have the following background preparation. A student with any deficiency is required to clear it by either (1) taking the course at CSBU and earning a grade of at least C or higher, or (2) taking and passing a proficiency before attempting to enroll in graduate level courses. With advance approval by the academic review committee, the student may be allowed to take proficiency exams to clear his/her background requirements. The following are the required background subjects:

1) Physics Subjects:
   - General Physics
2) Mathematical Subjects:
   - College level Mathematics in engineering majors
3) Engineering Subjects:
   - Introduction to Electric Circuits
   - Principle of Electronics

MSGE Curriculum

Students need a total of 36 school credits for graduation. The program consists of 9 courses and a project-design thesis. Each course counts for 3 credits, and the project-design thesis possesses 9 credits. 6 of the 9 courses are core courses and the rest 3 are electives.

1) Core Courses (18 credits)

The core courses provide a base for interdisciplinary in solar energy theories and techniques and system designs. A student must take the following courses to complete the graduate course requirement:

MSGE501	Introduction to Solar Energy Technologies
MSGE502	Principles of Electric Circuits and Electrical Power Systems
MSGE503	Physics of Solar Cells
MSGE504	Photovoltaic Technology Development, Measurement, & Characterization
MSGE505	Solar Power System: Design, Analysis, and Installation
MSGE506	Photovoltaic Manufacturing and R&D

2) Elective Courses (9 credits)

Currently five 600-level courses are available for election. As new courses are offered between publications of the university catalogs, the students are advised to refer to the "Concentration Area Course Tables" published with each release of the semester class schedule to select courses.

Elective courses:

MSGE601	High-Performance Photovoltaics
MSGE602	Thin Film Photovoltaics
MSGE603	Solar Thermal Technologies
MSGE604	Solar Cell Electronic Materials and Devices
MSGE605	Energy Economics, Management, and Policy

3) Project/Thesis (9 credits)

The Thesis/Project (Part-A MSGE598 and Part-B MSGE599) is carried out in

the last two sessions of the MSGE degree course for full-time students. Six hours per week in the first session, and twelve hours per week in the second session are devoted to directed laboratory and research work on an approved subject under guidance of members of the lecturing staff. Part-time students may need to attend the University full-time in their final session or attend for one further part-time session, if facilities are not available for the thesis to be done at work. Generally, the thesis involves the design and construction of experimental apparatus together with laboratory tests. A written thesis report must be submitted at the end of each session. Current listed projects are:

- Device Physics: Solar Cell Structure
- Remote Area Power Supply Design
- Hybrid System Design
- Photovoltaic Water Pumping
- Grid Interactive Photovoltaic System
- Building Integrated Photovoltaic
- Economic Issues for Photovltaics
- Government Policy Issues for Photovoltaics
- Photovoltaic for Developing Would

MSGE TOTAL REQUIREMENT (36 CREDITS)

MSGE Course Description

MSGE 501 INTRODUCTION TO SOLAR ENERGY TECHNOLOGIES (3.0 Credits)

The course covers the advancement, capacity growth, and use of renewable energy sources. Modern interest in renewable energy development is linked to concerns about exhaustion of fossil fuels and environmental, social and political risks of extensive use of fossil fuels and nuclear energy. It is a form of energy development with a focus on renewable energy.

MSGE 502 PRINCEPLES OF ELECTRIC CIRCUITS AND ELECTRICAL POWER SYSTEMS (3.0 Credits)

The course covers electric circuits design methods, electrical laws, network simulation, linearization around operating point. Emphasis in subjects of alternating current, balancing network, digital circuit, circuit theory, impedance, load, mathematical methods in electronics network analyzer, schematic, series and parallel circuits, as well as power transmission grid system.

MSGE 503 PHYSICS OF SOLAR CELLS (3.0 Credits)

Main chapters include interaction of light with matter, energy bands in solids, doping in silicon, the p-n junction, photoexcitation at p-n junction, illuminated p-n junction, the energy source, the efficiency limit, PV fundamental, and Si solar cell fabrication.

MSGE 504 PHOTOVOLTAIC TECHNOLOGY DEVELOPMENT, MEASUREMENT & CHARACTERIZATION (3.0 Credits)

The course covers the topics of electronic materials and devices, cell and module measurements technologies, tools, and analytical microscopy, electro-optical characterization, and surface analysis. Crystalline silicon research, high-performance PV, and thin film PV technologies.

MSGE 505 SOLAR POWER SYSTEM: DESIGN, ANALYSIS, & INSTALLATION (3.0 Credits)

The course covers the topics of island or standalone system, hybrid system, grid-connected & grid-tied system, grid connected inverters, connection to a DC grid, small-scale PV solar systems, small scale DIY solar systems, mounting systems, trackers, system performance and optimization, as well as standardization.

MSGE 506 PHOTOVOLTAIC MANUFACTURING AND R&D (3.0 Credits)

The course covers the topics of current manufacturing procedures, deposition plant for the production of solar cells, substrate washing machine, back reflector machine, amorphous silicon alloy deposition machine, transparent conductor deposition machine, module assembly plant, potential improvements in manufacturing processes, ECD's multiple-band-gap, multiple-junction technology for stable high efficiency solar cells, ECD's microwave plasma

assisted CVD technology for high rate deposition of amorphous silicon, optical enhancement, high quality doped layers, high quality intrinsic layer, device design, device current matching, as well as technical approach and time/cost estimate.

MSGE 601 HIGH-PERFORMANCE PHOTOVOLTAIC (3.0 Credits)

Discussed technologies are thin-film multi-junction cells, multi-junction concentrators, future-generation and Novel high-efficiency concepts, amorphous silicon, cadmium telluride, and copper indium diselenide. The course also includes emerging concepts, such as nano-siazed "quantum dots", as well as promise breakthroughs in PV efficiency and affordability which aim to double the sunlight-to-electricity conversion efficiency of PV devices while dramatically cutting the cost of solar energy.

MSGE 602 THIN FILM PHOTOVOLTAICS (3.0 Credits)

Thin-film technologies are also being developed as a means of substantially reducing the cost of photovoltaic systems. The rationale for this is that thin-film modules are expected to be cheaper to manufacture owing to their reduced material costs, energy costs, handling costs and capital costs. Thin-film technologies covered in this course are high precision thin film deposition on large substrates, thin-film deposition in Chemical Bath Deposition method, physical vapor deposition (PVD), thermal evaporation, electron beam deposition, cathodic arc deposition, chemical vapor deposition, spin coating, and metallo-organic decomposition.

MSGE 603 SOLAR THERMAL TECHNOLOGIES (3.0 Credits)

Topics are parabolic troughs technology, power towers, and dish/engine systems, hybrid solar lighting, solar water heaters, as well as solar thermal power cost and development issues.

MSGE 604 SOLAR CELL ELECTRONIC MATERIALS & DEVICES (3.0 Credits)

Te course of Electronic Materials and Devices studies semiconductor materials, device properties, and fabrication processes to improve the efficiency, stability, and cost of photovoltaic solar energy conversion. Our goal can be characterized three ways: 1) addressing current problems; 2) explore specific techniques and processes to develop and transfer technology improvements that industry will soon need; and 3) create new technologies and lead the development of the knowledge base and tools for the future of PV.

MSGE 605 ENERGY ECONOMICS, MANAGEMENT& POLICY (3.0 Credits)

The course covers the following subjects: Energy Introduction, Energy and the Environment, Energy Demand, Energy Trading and Price Formation, Energy Taxation, The Oil Market and Business, OPEC, Oil Supplies and Prices, The Electricity Markets and Business, The Company Structure and Analysis, Environmental Economics, Restructuring of Energy Industries, and Energy - Economic Modeling and policy Analysis.

English as Second Language program

Introduction

California South Bay University's English as a Second Language (ESL) program is designed to equip students with the English language proficiency required to communicate effectively across the entire range of linguistic environments - academic, professional, cultural, commercial, personal and social - encountered in American society. The program seeks to empower students by increasing their capacity for effective communication in the English Language. The program operates by employing a graduated series of levels incorporating increasingly complex conversational, compositional and grammatical forms, as well as by introducing students to some of the major social, cultural and philosophical tenets of the American perspective, providing students with both the language and the insight necessary for realizing their full potential as participants in the American experience.

Each course consists of twelve hours of weekly instruction. Each course is divided into two separate components, with six hours of instruction per week in listening comprehension, oral expression and pronunciation, and six hours of instruction per week in reading comprehension, grammar and written composition. Materials in each course level are designed to develop particular skills in accordance with the instructional standards outlined in the English as Second Language Model Standards for Adult Education Programs published by the California Department of Education.

Application Requirements

To apply for admission at California South Bay University, an applicant must submit the following items:

(1) An application form;
(2) A nonrefundable application fee $50.00;
(3) Official transcripts from previously attended colleges;
(4) Documentation demonstrating students' English proficiency to assess the qualification for taking degree courses.

Applicants' English proficiency is assessed by either taking a standardized test, such as TOEFL or IELTS, or an English placement test administered by CSBU. The result of the test determines whether the student needs to take courses in the English as Second Language program offered by California South Bay University and at what level. For the standardized TOEFL test, the passing score accepted by CSBU is 550 for the paper –based test, 213 for the computer-based test, and 79 for the internet-based test. A student can also take the English placement test on campus. The English placement test assesses students' English proficiency in listening comprehension, grammar, conversation, reading, and writing.

Course Description

ESL 101 Pronunciation 4 units
This course focuses on improving spoken English fluency and pronunciation through the practice of segmental sounds, common phonological reductions, and stress and intonation patterns. The purpose of the course is to teach students correct ways of pronunciation in order to enhance students' abilities in speaking English.

ESL 102 Grammar I 4 units
The objective of the course is to familiarize students with the basic structure of English grammar. Students will learn the accurate and appropriate language use through intensive written and oral practices.

ESL 103 Listening Comprehension 4 units
The course emphasizes listening comprehension. Students will learn practical vocabulary and basic sentence construction in order to get familiar with the English language. In addition, students will improve their listening apprehension through watching educational and TV programs as well as through TOEFL listening comprehension practices.

ESL 201 Reading 4 units
Students in this course build up their reading skills through exposing to short stories and articles in a wide range of disciplines including arts and humanities, social sciences, natural sciences, life sciences, and engineering etc.

ESL 202 Writing Composition 4 units, Prerequisite: ESL 102
At the beginning level, the writing class focuses on teaching students to write perfect sentences and paragraphs. Students will learn how to organize their ideas and present their thoughts in a logical and meaningful way.

ESL 203 Conversation 4 units
Students are encouraged to speak up and to have conversational talk with team members as well as the instructor in this course. The goal of the course is to reduce students' speech anxiety and to practice speaking with accurate pronunciation and sentence structures.

ESL 204 Grammar II 4 units, Prerequisite: ESL 102
The course focuses on advanced English Language structure. Students will learn the grammatical functions of English words, phrases, clauses, and sentences at a more sophisticated level.

ESL 205 Listening Comprehension II 4 units, Prerequisite: ESL 103
In this course, students will learn to advance their listening comprehension by being exposed to movie or TV programs that reflect American culture in various aspects including politics, economics, and society etc.

ESL 301 Advanced Reading 4 units, Prerequisite: ESL 201
The class focuses on discussions and conversations about advanced readings including novels, current news, and other articles in various disciplines. Students are encouraged to explore profound meanings embedded in those readings and be able to reflect on it.

ESL 302 Advanced Writing 4 units, Prerequisite: ESL 202
In the advanced writing class, students will work on intensive writings using a

variety of topics. They will practice more complicated sentence structures, and learn how to write clearly, effectively, and with a good flow.

ESL 303 Advanced Conversation 4 units, Prerequisite: ESL 203
The course is centered on developing rich conversational opportunities for students to enhance their speaking skills in order to reach fluency and accuracy. Topics may range from daily operations to academic settings.

ESL 304 Grammar III 4 units, Prerequisite: ESL 204
Students in this course will learn modification, syntax structures of the English language by studying English and American literature.

ESL 401 Introduction to American Culture 4 units, Prerequisite: ESL 301
The goal of the course is to familiarize students with American culture in order to help them adapt to a new environment smoothly. Students will be exposed to selected episodes of popular drama, talk shows, and news programs etc. They will discuss the cultural meanings underlying those presentations. It is expected that students will expand their knowledge of cultural idioms, phrases, and expressions as well as experience American classroom culture with a greater depth.

ESL 402 Presentation Skills 4 units, Prerequisite: ESL 303
This course is aimed at strengthening students' oral presentation ability. Students will practice how to do a good power point presentation, how to give a speech, and how to effectively engage audiences.

ESL 403 Academic Writing 4 units, Prerequisite: ESL 302, 304
In order to succeed in studying at USA, students need to learn how to write well in an academic context. The course emphasizes basic elements of academic writing, documentation, critical argumentation, and organization of research papers and projects.

6. FACILITIES

Teaching and Research

CSBU's teaching, research, and laboratory facilities are equipped with state-of-the-art hardware and software tools. In keeping pace with the advancement of information technology, CSBU's IT Department provides a modern digital campus environment to the faculty, students, and administrative staff.

Based on the hardware and software requirements for each course, the classroom is set up accordingly at the beginning of each semester. A group of classrooms are equipped with computer systems and Internet facility for the students to use. Modern design, simulation, and testing tools are installed based on class requirements.

University Library Resources

CSBU has always sought to increase the vast reference support and library resources made available to CSBU students, particularly our Master Degree students who need the most up to date research data, most commonly found in expensive subscription-based computer databases. CSBU has its own independent library, which contains five thousand books and a lot of useful information for students. And the Sunnyvale library is just 5 minutes walk away.

All CSBU students access privileges include: obtaining a library card; checking out books, CD's, DVD's and other materials; utilizing the new e-library; 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.

Computer Laboratory

Computer facilities include IC Layout Design Lab and EDA Lab, Networking and Software Testing Lab with full wireless Internet connections. The labs are open from 10:00 PM to 6:00 PM Monday through Friday, and limited hours on Saturday and Sunday. Please check with the Registrar for current access hours during each particular term. The use of computers at CSBU is an integral element of all programs. All students are highly encouraged to purchase and bring in their own laptop computers. Students are required to purchase and bring in their own digital-production-quality laptop.

Computer Networks

There are a variety of high-performance computers on campus to support teaching and learning, including high-capacity servers, advanced workstations, and modern PCs. Wireless computers as well as high-speed Internet access are provided to the students on campus. The campus networks have a node on the Internet, allowing faculty and student access to electronic mail, file transfer, and the World Wide Web.

7. STUDENT ACTIVITIES AND SERVICES

University Orientation

All new students are **required** to attend the new student orientation workshop offered before the beginning of each semester. On the Orientation Day, orientation packages are distributed to the new students; all administrative staff members and representatives from the faculty and the student body welcome the new students; both presentations and hands-on workshops are conducted to inform and to connect. The new students are informed of the staff's duties in order to receive proper administrative services, the facility and learning resources information to prepare them for classes, and important policies to stay focused on their academic objectives. Hands-on workshops may also be conducted to teach the new students how to use the university computer networks system, how to properly set up their accounts for printing services, how to access the CSBU Online Service Center to obtain online learning resources as well as make online requests for services, and how to access the university library online system to find library collection information. New students who have not registered in classes also receive academic advising and register for classes on the same day. International students are also provided a health insurance plan and information on particular regulations they must observe in compliance with the Federal regulations for international students. Those required to take an English placement test but could not take it on an earlier scheduled dates may take it on the orientation day before they can register in classes.

All CSBU students are welcome to attend the orientation to welcome the new students and receive current university information.

Academic Advisement

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

Student Health, Safety, and Housing

All full-time students are required to have their own medical insurance coverage. CSBU 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 $500-$800.

Student Governance

The CSBU 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 CSBU are free to organize and to join associations whose stated purpose is consistent with the University's mission. All student organizations seeking CSBU support must be registered. The CSBU 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 Program

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

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.

Sexual Assault

An allegation of sexual assault must promptly be reported to the Director of Student Services who will, in turn, report the allegation to the Police Department. The University will not attempt to adjudicate allegations of felonious acts.

Career Placement Services

As a key component of Student Services, career placement services help the students in the following areas: (1) Prepare resumes and sharpen interview skills, (2) Conduct career seminars and job fairs, (3) Identify the students' strengths and interests and provide career advice, (4) Provide internship opportunities to the students (5) Provide library materials and an online tool (via the CSBU online Service Center) for the students to gain access to various sources of job information. The Career Center in the library provides the students with access to a collection of books, articles, magazines, brochures, and videotapes about employment opportunities. The students may also use the computer facility in the Career Center for job search. Employment information can be found on the online job posting board through the e-Career Center in the CSBU Online Service Center.

The service provides career planning and job search assistance prior to and after

students' graduation.

All students are encouraged to begin working with a Student Services counselor on their resumes and career development plans in the early stages of their academic study.

California South Bay University is accredited by:

IREC

UNIVERSITY OFFICERS

Dr. Mike Mao
President

Dr. Cynthia Wan
Director of Academic Affairs

Kimula M. Dowell
Director of Admission

Jerry Zhou
General Manager

Sammy Ngai
Director of Administration Affairs

Junjun Zhang
Register

Ice Jian
Office Development

Vivian Luan
Director of Student's Service

Sue M Hou Lin
Financial officer

Ling Li
Advisor of MBA

Dr. Dan Teng
Advisor of Green Energy

Dr. ZhenYu Fu
Advisor of EE

John Liu
Advisor of CS

Mary Denial
Advisor of Biotech

Dr. Yu-an Cao
Advisor of Biotech

FACULTY

JD. Robert A. Roos
• Juris Doctor, Loyola University of Los Angeles, Los Angeles, CA
• Doctor of Social Welfare, University of California, Los Angeles, CA
• Bachelor of Science Business Administration, University of California, Los Angeles, CA

Gary Mercuri
• Master of Business Administration, Finance, Notre Dame De Namur University, Belmont, CA
• Bachelor of Environmental Studies, San Jose State University, San Jose, CA

Dr. Michael C. Sugarman
• Ph.D of Neuroscience, Molecular Biology, University of California, Irvine, CA, USA
• Master of Neuroscience, Molecular Biology, University of California Irvine, CA, USA
• Bachelor of Bilogy/Psychology, Union College, Schenectady, New York, USA

Sean O'Grady
• Bachelor of International Studies, University of California, Irvine, CA, USA
• TESOL/TEFL certified, Interlingua, Rome, Italy

Kimula M. Dowell
• Master of Clinical Psychology, San Francisco State University, CA, USA

Dr. Leo (Lin Yong) Pan
• Ph.D of Computer Science Engineering, Stanford University, Palo Alto, CA
• Master of Science, Computer Science, University of Science and Technology, China.

Jian Guo Yu
• Master of Science, Computer Science, San Jose State University, San Jose, CA
• Bachelor of Computer Science, Shandong University, China.

Dr. Ping Mao
• Ph.D of Computer Science, University of Texas, Dallas, TX
• Master of Science, Computer Science, University of Texas, Dallas, TX
• Master of Physics, Wuhan University, Wuhan, China.

Jin Chen
• Master of Science, Computer Science, Stanford University, Palo Alto, CA
• Bachelor of Computer Science, Huazhong University of Science and Technology, China.

Xiaofan Gong
• Master of English Language and Literature, Heilongjiang University, China
• Bachelor of English Education, Harbin Normal University, China

Margarita Perez
• Certificate of Medical Assisting, San Joaquine Valley College, Visalia, CA

Dr. Shougang Wang

• Ph.D of Physical Chemistry, Brown University, Providence, RI
• Master of Science, Physical Chemistry, the Chinese Academy of Science, China.
• Bachelor of Chemistry, Tsinghua University, China.

Dr. Yadong Wang
• Ph.D of Electrical and Computer Engineering, University of Rhode Island, Kingston, RI
• Master of Electrical Engineering, Nanjing University of Aeronautics and Astronautics, China.
• Bachelor of Zoology Electrical Engineering, Nanjing University of Aeronautics and Astronautics, China.

Dr. Chang Q Jiang
• Ph. D. of Systems Science, City University of London, UK
• Master of Engineering in Systems Engineering, Tianjin University, Tianjin, China
• Bachelor of Electrical Engineering, Tianjin University, Tianjin, China

Jerry Fu
• Certificate Program of VLSI Design Engineering, University of California, Santa Cruz, CA, USA
• Master of Electrical Engineering, Rensselaer Polytechnic Institute, NY, USA
• Master of Electrical Engineering, Tsinghua University, Beijing, China
• Bachelor of Electrical Engineering, Xi'an Jiaotong University, China

Dr. John (Xiong) Liu
• Ph.D of Electrical Engineering, University of California, Los Angeles, CA, USA
• Master of Electrical Engineering, University of California, Los Angeles, CA, USA
• Bachelor of Electrical Engineering, Fudan University, Shanghai, China

Rachel Salinas
• Certificated Nursing Assistant, Central County Occupational, CA, USA
• Certificated Medical Administration, Central County Occupational, CA, USA
• Certificated Acute Care, Central County Occupational, CA, USA

Judy Yuan,
• Master of Regional Studies, Harvard University, MI, USA
• Bachelors of Regional Studies, BeiJing Normal University, Beijing, China

Hua-Ke Lin
• Master of Engineering Management, Santa Clara University, CA, USA
• Master of Computer Science, Northwestern Polytechnic University, CA, USA
• Bachelor of Business Administration, TamKang University, Taiwan

Jonathan Lee
• Master of Accounting, University of Scranton, Pennsylvania, USA
• Bachelor of International Business, Fu-Jen Catholic University, Taiwan

Ling Li
• Master of Business Administration in Project Management, Northwestern Polytechnic University, CA, USA
• Bachelor of Business Administration and Information System, Northwestern Polytechnic University, CA, USA

• Bachelor of Commerce Accounting, Pajadjaran University, Bandung, Indonesia

Dr. Ming (Mike) Mao
•Ph.D of Biotechnology, Stanford University, CA, USA
•Ph.D of Biotechnology, Tong-Ji Medical University, Microbiology and Immunology, China
•Master of Microbiology and Immunology, Tong-Ji Medical University, China
•Medical Doctor of Medicine, Tong-Ji Medical University, China

Dr. Naibo Yang
• Ph. D of Ion channel Physiology / Neurobiology, Thomas Jefferson University, USA
• Master of Biomedical Engineering & Instrument, Tianjin University, P.R. China
• Bachelor of Biomedical Engineering & Instrument, Tianjin University, P.R. China
.

Sara Shueh
• Master of Business Administration, University of Louisville, KY, USA
• Bachelor of Business, University of Missouri-Columbia, MO, USA

Dr. Yi Ning
• Ph.D of Nano Technology, Northwestern Polytechnic University, CA, USA
• Master of Nano Technology, Purdue University, West Lafayette

Dr. Yi Zhang
• Ph.D of Electrical Engineering, University of California Santa Clara, CA, USA
• Master of Electrical Engineering, University of California Santa Cruz, CA, USA
• Bachelor of Optical Engineering, Zhejiang University, China

Dr. Yu-An (Ryan) Cao
•Ph. D of Toxicology and Molecular Biology, Tongji Medical University, China
•Master of Toxicology and Biochemistry, XingJiang Medical University, China
•Medical Doctor in Medical Science of Hubei Medical University School of Medicine, China

Dr. Dan Teng

• Ph.D of Semiconductor Physics, University of Notre Dame, USA
• Master of Physics, Tsinghua University, China
• Bachelor of Physics, Tsinghua University, China

Eugene Wang
• Master of Computer Science, Santa Clara University, CA, USA
• Bachelor of Electrical Engineering, UC Berkeley, CA, USA

Dr. Jie Xue
• Ph.D of Material Science, Cornell University, NY, USA
• Master of Chemical Engineering, Syracuse University, NY, USA
• Bachelor of Chemistry, Tsinghua University, China

Dr. Ziqiang Qiu
• Ph.D of Solid-State Physics, Johns Hopkins University, MD, USA
• Bachelor of Physics, Beijing University, China

Dr. Ruhong Jiang

• Ph.D of Molecular and Quantitative Genetics, Oklahoma State University, Stillwater, OK, USA
• Master of Animal Physiology, China Agricultural University, Beijing, China.
• Bachelor of Zoology, Fudan University, Shanghai, China.