**ABET**

**Appendix D to the Self-Study Reports**

**Institutional Summary**

**For the**

**College of Engineering, Computer Science, and Technology**



**at**

**California State University, Los Angeles**

**Los Angeles, CA**

**July 1, 2012**

**CONFIDENTIAL**

The information supplied in this Self-Study Report is for the confidential use of ABET and its authorized agents, and will not be disclosed without authorization of the institution concerned, except for summary data not identifiable to a specific institution. The Institutional Summary was prepared in collaboration with the Office of the Provost.

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**Institutional Summary**

### The Institution

#### Name and address of the institution

California State University, Los Angeles

5151 State University Drive

Los Angeles, California 90032

#### Name and title of the chief executive officer of the institution

Dr. James M. Rosser

President

1. Name and title of the person submitting the self-study report.

Dr. Keith Moo-Young

Dean

College of Engineering, Computer Science and Technology

1. Name the organizations by which the institution is now accredited, and the dates of the initial and most recent accreditation evaluations.

California State University, Los Angeles is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC), the agency responsible for granting national accreditation to colleges and universities in California, Hawaii, Guam, and the Trust Territories. The University received its initial WASC accreditation in 1954.

The cycle of accreditation is normally ten years, during which institutions involve their constituencies in a reflective process of self-study and evaluation.  There are three stages during the most recent accreditation review process

INSTITUTIONAL PROPOSAL

* Approved by WASC January 2007

CAPACITY AND PREPARATORY REPORT

* CPR Visiting Team Spring 2009

EDUCATIONAL EFFECTIVENESS REPORT

* EER Visiting Team Fall 2010

At its meeting on February 16-18, 2011, WASC has reaffirmed the accreditation of California State University, Los Angeles. The Commission also “confirms that California State University, Los Angeles has satisfactorily addressed the Core Commitments to Institutional Capacity and Educational Effectiveness, and has successfully completed the three-stage review conducted under the Standards of Accreditation”.

1. Mission Statement and Institutional Learning Goals of the University

Mission Statement

Cal State L.A., a member of the California State University (CSU) system, offers excellent and innovative educational opportunities to an urban student population that reflects the diversity of the Los Angeles basin, including:

* Preparing students to appreciate, engage, enhance and transform the social, cultural, civic, and workplace structures of American and global societies;
* Providing students with the capabilities, skills, and opportunities to take full advantage of life-long learning, including graduate and professional studies, and opportunities to participate in research, scholarly, and creative activities;
* Offering students tools for personal and academic achievement, economic mobility, and healthier lives;
* Serving as a gateway among the Cal State L.A. community, the greater Los Angeles community, and world community for shared educational and cultural life;
* Providing high quality professional services to all constituencies of the University.

Institutional Learning Goals

California State University, Los Angeles students expand and deepen their interdisciplinary and general understanding of the world, enhance their critical skills, and take responsibility for a lifetime of learning, and as graduates become individuals who engage, enhance, and contribute to democratic society. The following are the institutional learning goals of CSULA:

* *Knowledge: Mastery of content and processes of inquiry*
CSULA graduates have a strong knowledge base in their academic major and can use powerful processes of inquiry in a range of disciplines. They engage contemporary and enduring questions with an understanding of the complexities of human cultures and the physical and natural world and are ready to put their knowledge into action to address contemporary issues.
* *Proficiency: Intellectual skills*CSULA graduates are equipped to actively participate in democratic society. They are critical thinkers who make use of quantitative and qualitative reasoning. They have the ability to find, use, evaluate and process information in order to engage in complex decision-making. They read critically, speak and write clearly and thoughtfully and communicate effectively.
* *Place and Community: Urban and global mission*
CSULA graduates are engaged individuals who have contributed to the multi-lingual and multiethnic communities that constitute Los Angeles and the world of the future. They are aware of how their actions impact society and the environment, and they strive to make socially responsible decisions. They are community builders sensitive to the needs of diverse individuals and groups and committed to renewing the communities in which they live.
* *Transformation: Integrative learning*
CSULA graduates integrate academic learning with life. They engage in community, professional, creative, research and scholarly projects that lead to changes in their sense of self and understanding of their worlds. Graduates integrate their knowledge, skills and experience to address complex and contemporary issues and act ethically as leaders for the 21st century.
1. Mission Statement and Goals of the College

Mission Statement

To provide our students with innovative learning experiences and service opportunities and to graduate well educated professionals who are prepared to meet the challenges of a rapidly changing world.

Goals

* *To design a world-class curriculum enabling our students for life long learning and adapting to an ever changing technological environment,*
* *To become the most responsive graduate engineering, computer science, and technology program in Los Angeles that meets the needs of the working professional,*
* *To demonstrate internationally recognized leadership in applied research, advance prototyping, and design in strategic areas that are fully integrated into the bachelor’s and master’s educational programs,*
* *To humanize engineering, computer science, and technology through our community service and globalization activities that enable our engineering community to reflect the 21st century workforce,*
* *To be consistently ranked as one of the top 20 Engineering programs in the Nation.*
1. **Type of Control**

California State University, Los Angeles (Cal State L.A.) is a state-supported, public institution with a Carnegie designation of Master’s Large. It is one of 23 universities that comprise the California State University System (CSU) Cal State L.A. is a unique institution within the CSU and the State of California. This uniqueness derives in large part from its location and the resulting ethnic diversity of its students. Situated in an urban environment four miles east of downtown Los Angeles, Cal State L.A. serves the predominantly Mexican-American community of East Los Angeles and the predominantly Asian-American community of the San Gabriel Valley. Because of the ethnic diversity of its students, Cal State L.A. was the first university in California to have an engineering program become a federally-designated Title III "Minority Institution" and the first institution in California to qualify as an "Hispanic Serving Institution (HSI),".

1. **Educational Unit**

The College of Engineering, Computer Science, and Technology is organized into five academic departments as listed below:

Department of Civil Engineering

Department of Electrical and Computer Engineering

Department of Mechanical Engineering

Department of Computer Science

Department of Technology.

The Department of Technology offers undergraduate programs in Fire Protection, Graphic Communications, Aviation Administration, and Industrial Technology. The department also offers an M.A. degree in Industrial and Technical Studies.

Significant beneficial synergies exist between all the five departments in the college. Examples are shared laboratories and computer facilities, joint participation in student design competitions, faculty collaboration, and joint outreach and student recruitment efforts. The Administrative Heads of the other auxiliary administrative units that report directly to the Dean of the College are:

Dr. Don Maurizio, Associate Dean

College of Engineering, Computer Science, and Technology

Dr. Benjamin Lee, Faculty Director and ABET Coordinator

College of Engineering, Computer Science, and Technology

Dr. Rupa Purasinghe, Chair

Department of Civil Engineering

Dr. Fred Daneshgaran, Chair

Department of Electrical and Computer Engineering

Dr. Darrell Guillaume, Chair

Department of Mechanical Engineering

Dr. Raj Pamula, Chair

Department of Computer Science

Dr. Keith Mew, Chair

Department of Technology

Mr. Fernando Loza, Director

Computer Productivity Center

Ms. Lily Nguyen, Director

Strategic Alliance Initiative

Ms. Connie Ponce, Resource Manager

College of Engineering, Computer Science, and Technology

Ms. Frances Hidalgo-Segura, Director

Student Academic Support Services

Ms. Evelyn Crosby, Director

Student Advising Services

Mr. T.Fox, Director

MESA Engineering Program (MEP)

Ms. Thelma Federico, Director

MESA Schools Program (MSP)

All the Administrative Heads listed above report to the Dr. Keith Moo-Young, Dean of the College. The Dean of College reports to Dr. Ashish Vaidya, Provost and Vice President for Academic Affairs, who in turn reports to President Dr. James M. Rosser.

The organization charts for the University President, Provost and Vice President for Academic Affairs Division, Academic Affairs Management Group, and College of Engineering, Computer Science and Technology are shown below.





**Academic Affairs Management Group (AAMG)**

**College of Engineering, Computer Science, and Technology (ECST)\***



\*The Chart represents the structure of the college as of Fall 2011 as approved by the Provost Office.

1. **Academic Support Units**

The units outside the College of Engineering, Computer Science and Technology (ECST) that support the Engineering and Computer Science academic programs are:

* Other Academic Departments
* Information Technology Support
* Library
* Writing Center

Other Academic Departments

Listed below are the Department Chairs of supporting academic departments that are responsible for the courses required by the programs being evaluated:

| **Name** | **Title** | **Required Courses** |
| --- | --- | --- |
| Dr. Grant Frasergfraser@calstatela.edu | Chair,Department of Mathematics | Math 206-209, 248, 215, 255, 248, 255, 270  |
| **Dr. Susan Terebey**sterebe@calstatela.edu | Chair,Department of Physics and Astronomy | PHYS101-103, 211-214 |
| Dr. Robert L. Vellanowethvllnwth@calstatela.edu | Chair,Department of Chemistry and Biochemistry | CHEM 101 |

Information Technology Services

The Division of Information Technology Services (ITS) supports the University's ever-increasing use of new and various technologies, from e-mail and telephone service to the latest software applications. Vital support services are provided through the following units within the division:

* **CMS and Enterprise Systems**

CMS and Enterprise Systems is an active partner in developing and implementing the Web-based Golden Eagle Territory (GET) Student Administration system.  The initial rollout is in four phases, with subsequent upgrades and functionality being rolled out in increments of six months or less.

This ITS unit contributes to the installation, upgrades, application development, and technical support for Financials Systems (general ledger, asset management, grants, etc.), HR Systems (employee records), Contributor Relations, Student Financials, Financial Aid, and Student Administration (including Admissions, Student Records, Campus Community, and Academic Advisement).

* **IT Infrastructure Services**

IT Infrastructure Services provides services ranging from technical architecture and design, to configuration and support in the areas of network (LAN/WAN), servers, computer operations, database administration, telecommunications, and desktop services. These services are delivered to a diverse constituency of students, faculty and staff.

In addition, IT Infrastructure Services provides support designed to increase the personal productivity of both the campus users and the ITS division. It is responsible for maintaining the ITS software archive; distributing site license software; and review of IT Procurement approvals. This unit also installs and maintains the equipment available in the dozens of Electronic Classrooms, Technologically Enhanced Classrooms (TEC), and Media Enhanced Classrooms (MEC) located throughout the University. They work closely with the Office of Academic Support to deliver the technology used in instruction and research, and to ensure that the appropriate computing and information services are available for the academic community.

ITS provides full-time faculty and department staff with either a desktop or a laptop computer, as chosen by them, with access to a laser printer. These are refreshed on a three year cycle (approximately) as indicated by the university baseline plan (<http://www.calstatela.edu/its/baseline/>). These baseline computers are preconfigured to work with the campus infrastructure, and include the operating system, productivity, security, and licensed software (e.g. Microsoft Office) appropriate for a particular machine.

Currently, this ITS unit is heavily involved in the architecture, configuration, and deployment of the technical infrastructure components to support the Web-based GET Student Administration system and the Web-based campus e-mail system.

* **IT Security and Compliance**

IT Security and Compliance ensures that the use of information technology at Cal State L.A. adheres to federal and state statutory regulations and requirements, as well as CSU Executive orders and University policies and procedures.

This unit is responsible for writing ITS guidelines and policies, auditing ITS procedures for security compliance, and managing the ITS document control process. In addition, this unit provides information security assessments for all campus departments, sponsors campus security awareness events and maintains the [Are You Secure?](http://www.calstatela.edu/its/itsecurity/) Web site, where users can find the latest security best practices and related links.

* Support Services

A wide variety of services designed to increase the personal productivity of our users are offered, such as: Administrative Support Services; Baseline Project Management; Digital Documentation Services; ITS Help Desk & Services Accounts; Media Technical Support Services; Multimedia Services; Training Services; and Web Services.

Information Technology Services (ITS) is responsible for maintenance and upgrading of all computing facilities as indicated in their mission below:

*“ITS supports the University's ever-increasing use of new and various technologies including latest software applications. The Desktop Services (DS) is dedicated to providing a quality desktop downloadable image, called DSS (Desktop Services Software), containing the operating system, productivity, and security software to support all University machines. DS is also involved with wireless and mobile infrastructure and services. Baseline Services (BS) provides new desktop hardware and systems in a cycle called Baseline Refresh. Most University desktops and some notebooks fall into this category. It is also this group's responsibility to maintain these machines*

*The Academic Information Technology Consultants (ITCs) are full time staff member who play critical roles as liaison between University faculty and staff, Information Technology Services (ITS), and campus colleges in a wide range of areas related to the use of information technology and information security. ITCs enhance teaching, learning and administrative operations by providing high quality Instructional Technology support to the students, faculty, and staff. This includes workstation hardware and software support for faculty, staff, the computer laboratories, and technology enhanced classrooms (TECs)”*

Information Technology Consultants (ITC) within the College work closely with the ITS to ensure that the computing needs of the college programs are met. As a part of the ITC’s job responsibilities include training of students, staff, and faculty; updating and maintaining hardware, software and documentation; ensuring the college’s hardware configuration meets current and evolving needs; and participating in College and University system development projects. The ITCs report to the Associate Dean of the College

Library

The John F. Kennedy Memorial Library’s mission is to provide instructional support for the campus.  Detailed information about the University Library and the services provided can be found on its web page: [www.calstatela.edu/library](http://www.calstatela.edu/library).

To ensure that the Library achieves its mission, each College and its departments has a librarian liaison, who provides a single point of contact for all library needs for that college.  The liaison to the College of Engineering, Computer Science and Technology (ECST) is Ken Ryan.  In addition to a Masters in Library Science, and a Masters in Linguistics, Mr. Ryan has undergraduate work in the sciences as well as a Bachelors Degree in Mathematics, and worked for many years as a technical writer/editor and contracts manager for a Fortune 500 global semiconductor, sensors and controls and educational products and Services Corporation.

Over the years, the Library has striven to maintain its commitment to ECST in a variety of ways, including support through the purchase of relevant materials – books, journals, electronic resources, media materials, etc. – as well as by providing instructional support.

As with all publicly supported institutions, fiscal uncertainties and challenges continually present themselves. Hence, Library expenditures on behalf of ECST have fluctuated, based on the availability of occasional additional funding from the campus, drastic price increases from publishers, the need for expensive reference books and sets, new databases, and so forth.

The average materials (books, journals, databases) expenditures on behalf of ECST over the review period has been about $270K annually. The Library has developed statistical allocation formulas to ensure that all campus departments, programs and colleges receive appropriate funding support in the Library for their respective programs, based on numbers of majors, numbers of graduates, faculty FTE and credit hours offered.

In terms of the journal collection support for the College, currently there are over 2,100 subscriptions, the vast majority of which (over 95 percent) are available on-line in full-text form.  In addition to online full-text access to engineering articles in journals through journal publishers’ websites (e.g., ASME Online Journals, Elsevier ScienceDirect, Wiley Online Library, etc.), the Library subscribes to Engineering Village 2 which gives citation access and full-text links to a vast collection of scholarly engineering society and commercial and professional publications. Automatic linking systems (“Find It!”, the local name for the Serials Solutions 360 Link platform), connect the user from a database citation to the full text of an article, or to an automated InterLibrary Loan ordering system through which articles may be ordered at no cost to the requestor with merely a few clicks of the mouse. Electronic deliveries via e-mail are made in a matter of a few days.

Additional InterLibrary Loan systems work in parallel to ensure that items (e.g., books) that the Library does not own are made accessible to the user. The Library provides assistance in setting up accounts with ILLiad, the InterLibrary Loan platform from Atlas Systems, Inc. All of the Library’s electronic resources are available on- and off-campus to students and faculty.

The Library’s book collection currently includes about 58K circulating and reference books in the engineering, computer science and technology call number ranges. In addition, the Library subscribes to Safari Tech Books Online, a collection of approximately 4K current (with a 5-year moving window) e-books on information technology and computer programming/software.

Finally, as part of its educational mission, the Library provides individual and group instruction as a part of its information literacy programs.  Over the period of this review, nearly 1,700 ECST students (and their instructors) participated in over 80 information literacy instruction sessions in the Library or in various e-classrooms in the College. While these numbers are modest in comparison with, for example, the numbers of information literacy sessions given by librarians to freshman English composition classes, they are significant in that, for example, the incoming freshmen and transfer students in ECST are receiving an introduction to an important skill that will carry through with them throughout their careers and strengthen their marketability upon graduation.

Writing Center

The Writing Center offers a variety of services to the entire CSULA student body with any type of writing assignment at any stage of the process. The Writing Center helps the students understand the assignment, organize, and revise their paper. The Writing Center can even help the students learn to proofread for the most common mistakes.

 The Writing Center provides tutoring and other assistance for all CSULA courses, from pre- baccalaureate composition courses to graduate seminars. In general, these services are not remedial, but are instead a powerful alternative or supplement to traditional modes of classroom instruction. The Writing Center is strongly focused on the long-term development of individual writers rather than quick fixes for the paper at hand.

All Cal State L.A. undergraduate and graduate students who are pursuing a degree must satisfy the Graduation Writing Assessment Requirement (GWAR) by passing the Writing Proficiency Examination (WPE), a CSU system-wide requirement. The Writing Center offers support for the Writing Proficiency Exam (WPE) by providing services that include workshops for first-time takers, consultation for those who do not pass, and accurate information for all students, including advice and status information concerning the English requirement.

Based on the decision of the Writing Center, students may be allowed to re-take the WPE or they may be required to enroll in UNIV 401, the upper division writing proficiency course. University 401 is thus the course alternative to the Writing Proficiency Examination (WPE). The Writing Center strives to administer University 401 in a way that motivates students to improve their writing and meet the WPE requirement in a timely manner. (See WPE and UNIV401 Course Files for more information).

1. **Non-academic Support Units inside ECST**

The units within the College of Engineering, Computer Science and Technology (ECST) that support the students and the academic programs are:

* ECST Computer Productivity Center
* Student Academic Support Services
* Technical Staff Unit
* Strategic Alliance Initiative
* College Industry Advisory Board.

ECST Computer Productivity Center

The Engineering, Computer Science and Technology Computer Productivity Center (CPC) supports the computing needs of engineering, computer science and technology students, faculty, and staff in the College.  The role of this center is to provide facilities and training to students across various disciplines.

The CPC is housed in a multi-room suite located in the Engineering and Technology Building (C-wing, second floor) that includes one large Open Access Computer Lab room and three support computer lab rooms.  In the center of the suite is a support area that consists of a student "help desk," server room, and a plotter room.  The help desk is surrounded by three computer classrooms.

The CPC’s flexible, functional design allows for support staff to monitor and assist in all areas of the CPC, while allowing for classroom privacy, as needed.  The CPC provides users an array of hardware, software, file servers, and printing devices.  A number of Dell PowerEdge servers are used as file servers and license servers.  There are several servers in the CPC that support software applications under the UNIX environment.  Printing devices available in the CPC include laser printers, dot-matrix printers, and a high-end large paper format HP Designjet color plotter. All workstations in the CPC are connected to the campus-wide network.  In addition to access to local applications (Windows, Mac, Unix), students and faculty have access to other academic time-share computing systems both on- and off-campus, such as library resources, electronic bulletin boards, electronic mail, and the Internet.

The open access facility, known as the "ECST Computer Link," is open six days and 60 hours per week during the quarter.  The computer facility provides individual access to 42 workstations including PC and Macintosh platforms.  Among the 42 workstations, are 39HP DC7900 workstations.  The HP workstations are configured with Core 2 Duo processor, 4GB RAM, 250 GB SATA hard drive, high end graphics card, DVD RW Combo drive, and 19" HP Flat Panel monitors. All of these workstations operate under Windows XP SP3 OS.  General and college specific applications available to users include Microsoft Office 2010 Suite, Microsoft Visual Studio 2010, Microsoft Visio, Microsoft Project, Adobe Design Premium CS5 Suite, Eclipse IDE, SWI-Prolog, Allegro CL,SolidWorks/COSMOS, CATIA V5, DELMIA, AutoCAD, Autodesk Civil 3D, MicroStation, MasterCAM, MathCAD, SAP 2000, MSC Software (Patran, Nastran, Adams), Labview, and Matlab.

Users also have access to 5Mac workstations to run Mac and UNIX applications.  There are two 24-inch iMacs and three high-end Mac Pro’s with 24-inch monitors.  Available Mac applications include Adobe Design Premium CS5 suite, XCode IDE, Microsoft Office for Mac, and SPSS.

In addition to the E&T Computer Link, the CPC has three PC-based general application computer classrooms (C255D, C255E, and C255G) each equipped with 25 Core 2 Duo processor based workstations.  The classrooms are equipped with HP DC7900 computers with Core 2 Duo processor, 4GB DDR RAM, 250GB SATA hard drive, DVD RW Combo drive, and 19” flat panel monitors. All three classrooms are multimedia-ready with state-of-the-art instructional aids such as an XGA resolution projection system with audio, and retractable projection screen.

The two other computer classrooms are designed to meet specialized curricular needs. One classroom (C254) is a computer aided design laboratory equipped with 21 workstations.  Each workstation is a HP 8100 with Core i7 processor, 4GB RAM, 250 GB SATA hard drive, high-end video card, C8.RW/DVD combo drive and a 20" widescreen monitor. The fifth classroom (C256) is group work laboratory.  There are 21 workstations that are Dell Optiplex 745, 2GB RAM, 160 GB hard drive, DV8.ROM drive, and a 19" flat panel monitor.

There are four other computer classrooms outside the CPC area that are used for specialized curricular needs. The B9 computer lab has a PC and Mac on each desk and is used mainly to teach graphics and desktop publishing courses. There are 25 Apple 24” iMac computers with 2GB RAM, DV8.RW, 160 GB SATA hard drive. There are 25 HP 8100 computers with Core i7 processors, 4GB RAM, 250GB SATA hard drive, DVD RW combo drive and 22” flat panel monitors. The remaining three computer classrooms, A309, A210 & A220, are mainly used by the Computer Science department. There are 30 Dell Optiplex 755 computers with Core 2 Duo processors and 512MB RAM, 160GB hard drive, DV8.ROM drive and a 19” flat panel monitor in each of the A309, A210, and A220 rooms. All the computers in the classrooms are connected to the campus-wide network, have access to local applications, and access to other academic time-share computing systems both on- and off-campus, such as library resources, electronic bulletin boards, electronic mail, and the Internet. These computer classrooms are multimedia-ready with instructional aids such as an XGA resolution projection system and a retractable projection screen.

University and College programs support faculty use of instructional technology.  Part of this support is the installation and support of Technology Enhanced Classrooms (TEC), also known as Smart Classrooms. Current TEC classrooms are equipped with a network computer, speakers, Laptop hookup, Multimedia projector, DVD/VCR combo, and document camera.  There are several university-supported TEC rooms (ET A126, ET A129, ET A226, ET A227, ET A331, ET A332, ET B107, ET B108, ET C154 and ET C160) in the College. There are currently three portable TEC carts that can be checked out by faculty for use in classrooms that are not considered TEC rooms. Current TEC carts are equipped with a network computer, speakers, laptop hookup, and multimedia projector and DVD/VCR combo. In addition, College is in the process of equipping the remainder of its instructional labs with instructional technology including workstations, multimedia projectors, DVD/VCR combo, document camera, laptop hookup.

Distance Learning Facility: The design of the renovated Engineering and Technology Building provides an infrastructure with capability for sending and receiving data, video and audio to/from the building and distribution throughout (i.e., classrooms, labs) through a central routing/control room in ET A330.

Room ET A331 is designed to include all components of Technology Enhanced Classroom (TEC) and distance learning functions. It is currently equipped to serve as a distance learning classroom with capabilities including two-way interactive audio, videoconferencing and one-way microwave video with two-way audio.  This allows for uplink/downlink capabilities with satellite and cable television providers.  Equipment in the room includes a Polycom Viewstation EX, Dell Precision 380 Workstation MT 64, Parkervison Presenter Camera System, wireless microphone and all the equipment found in a TEC room setup. Video streaming capabilities are handled via video streamer server and recorded classes can be archived and accessed 24/7.

Some Computer Classrooms or Smart Classrooms are also equipped with Mediasite technology which allows the recording of streaming lectures. The videos provide a virtual classroom for students to watch at their convenience. This enables students to watch the lectures and to slow down portions of these lectures that they may want to study in more detail. The Mediasite lectures are also available to view live in the event that the student cannot make it physically to campus. Students can still watch the lecture from anywhere in the world as long as they have an Internet connection. This process should turn out to be significant for student retention. Mediasite Classrooms are indicated below:

| Room  | Description |
| --- | --- |
| ETA 210  | Manual or preset recording |
| ETC 255E | Manual or preset recording |
| ETA 331 | Manual or preset recording |
| ETA 332 | Manual or preset recording |
| Portable Recorder  | Available for recording presentations in room |

Mediasite Classrooms

All the computer stations described in all labs in ECST are installed with a software image that serves all the major disciplines as described below:

The College of ECST spends about $100,000 a year for software license fees. The College of ECST offers licensed software as well as Open Source software to its Faculty and Students. Listed below is a representation of just a few of the software titles we have available in the College.

Common software among all Engineering & Computer Science disciplines includes:

* Adobe Creative Suite (Acrobat, Photoshop, Dreamweaver, etc)
* MathCAD
* Mathematica
* Matlab
* Microsoft Office (including Visio and Project)
* SPSS
* Maya

Several CAD/CAM/FEA/FEM software packages are available:

* AutoCAD
* Civil 3D
* CATIA
* DELMIA
* MasterCAM
* Microstation
* Solidworks
* MSC Patran, Nastran, and Adams

Several Civil Engineering specific software packages are available:

* ArcGIS
* GSTABL
* SAP2000
* Liquefy Pro

Several Computer Science specific software packages are available:

* Eclipse
* Emacs
* gVIM
* Putty
* Java Development Kit
* NetBeans
* Prolog
* Textpad
* Tortoise SVN
* Visual Studio .NET
* Winhugs
* Adobe Creative Suite CS5 (Master Collection)
* Unity 3D & Panda 3D Game Engine
* Adobe Creative Suite CS4 (Design Premium)
* Microsoft
* MATLAB, MATHCAD
* OPNET
* VMWare

Several Electrical Engineering specific software packages are available:

* ATP Draw
* Cadence (PSPICE, Orcad, Schematics)
* ETAP
* National Instruments Labview
* Python
* THRSim
* OPNET

In addition to the computing resources available in the College, the University provides Wireless Internet connection throughout the Engineering & Technology building as well as at several other buildings and locations across campus.

Two full time Information Technology Consultants (ITC) for the College, Mr. Yin Tam and Mr. Fernando Loza, work closely with department chairs, faculty, staff and college administration to ensure that the computing needs of the college programs are met. ITC’s job responsibilities include training of students, staff, and faculty; updating and maintaining hardware, software and documentation; ensuring the college’s hardware configuration meets current and evolving needs; and participating in College and University system development projects. ITCs report to the Associate Dean of the College.

STUDENT ACADEMIC SUPPORT SERVICES

The College of ECST Student Academic Support Services’ (SASS) mission is to provide empowering educational opportunities to nurture student academic, professional, leadership, and social development. It is dedicated to support the mission of the college by increasing the number of students in the educational pipeline. This is done by providing services to pre-college students in middle schools and high schools, partnering with feeder community colleges, and incorporating student success and retention strategies at the undergraduate level. Services are provided through the following programs.

1. MESA Schools Program (MSP) - The MSP provides academic development for middle school and high school students so they will succeed in math and science and go on to attain baccalaureate degrees in math-based majors. The MSP partners with math and science teachers to administer the program at local schools.
2. MESA Engineering Program (MEP) - The MEP is an academic program that supports educationally disadvantaged students to attain four-year degrees in engineering or computer science. MEP employs various student retention strategies including academic monitoring, academic excellence workshops in math and cornerstone engineering courses, course clustering, introduction to engineering orientation courses, student study center, and connections to student organizations. In addition MEP fosters the leadership and professional development of students through college and national conferences hosted through various student organizations.
3. Summer Transition into ECST Program (STEP) – The purpose of STEP is to provide access for educational development and excellence in mathematics for ECST incoming freshman students. It targets the inadequate preparation in mathematics which hinders many students from pursuing an engineering degree in a successful and timely manner. STEP aims at helping students reinforce their math skills and bridging them to the next level in mathematics before starting their first quarter at Cal State LA. In addition, this retention program establishes an early support network and fosters personal relationships among freshman students, student leaders, faculty, and staff to aid with the transition from high school to college and provides various personal development workshops to assist with the academic rigors students may face during their first-year-experience in the College of ECST.
4. ECST Advisement, Outreach, and Recruitment Center - This Center provides an array of services to prospective, incoming freshman, and second year students in all majors. These services include: visits and presentations at various high schools and community colleges aimed at increasing awareness about academic and support programs within the College of ECST and university admission requirements, working closely with academic departments within ECST to increase the number of students that attend the College of ECST, freshman and transfer orientations, academic advisement through professional staff and peer advisors, engaging freshman in the learning communities and academic excellence workshops, and assist students with scholarship opportunities.

Technical Staff Unit

The College Technical Staff consists of five trained, experienced technicians who maintain the College’s instructional laboratories, instruments, and equipment.  The technicians report to the Associate Dean of the College. The Associate Dean works closely with department chairs, faculty (for instructional and research purposes), staff, and administrators to establish priorities and monitor productivity.

Technical staff members have been selected and trained to develop their breadth and depth of knowledge related to the general and specialized requirements necessary to assure effective functioning of each laboratory and the equipment therein.  Their complementary sets of skills allow for utilization of a *matrix management system*, which is coordinated by the Associate Dean.  In this system, a member of the technical staff is assigned primary general responsibility for each laboratory and is also utilized across the College (by faculty, administrators, and other members of the technical staff) for their specialized expertise in ad hoc teams.  This provides everyone in the organization with a clear method for identifying who is responsible and accountable for coordination of each lab’s support, while making maximum utilization of the special skills and talents of each member of the technical staff.

Members of the technical staff work closely with the College Information Technology Consultants (ITC’s – computer and software experts) on issues related to computing as necessary.  Where required, student assistants work for members of the technical staff to perform some functions under their direction and supervision.

Technical staff members are housed in appropriately designed technical support rooms within the Engineering and Technology Building, and have access to the tools, instrumentation, equipment, and resources necessary to perform their duties.  In addition, the College has a fully equipped technician’s laboratory and machine shop (B16).

Strategic Alliance Initiative

The purpose of the Strategic Alliance Initiative is to establish the College of Engineering, Computer Science and Technology (ECST) at California State University, Los Angeles (CSULA) as a recognized leader in providing professional practice experiences for its engineering and computer science students to enhance the recruitment and retention of the highest potential students.

CSULA is beginning the fourth year of the Strategic Alliance Initiative. Outcomes achieved over the past three years include an award winning sponsored Professional Practices Program (see below), a sponsored Corporate Scholars Program and nine founding Strategic Corporate Partners: The Aerospace Corporation, The Boeing Company, DirecTV, Heateflex, Los Alamos National Laboratory, Northrop Grumman Electronic Systems, Northrop Grumman Integrated Systems, Pratt & Whitney Rocketdyne, and Southern California Edison. In its second and third year, the college welcomed new partners that included: EmCycle, Medtronic MiniMed, Naval Surface Warfare Center-Corona, Space Systems Loral, Southern California Gas Company, Raytheon, and the United Parcel Service (UPS).

CSULA was awarded the prestigious Excellence in Engineering Education Collaboration Award by the Corporate Member Council of the American Society for Engineering Education (ASEE) at the February 2012 ASEE/CIEC Annual Conference. The Aerospace Corporation, the Boeing Company and Northrop Grumman Corporation were recognized as Corporate Council Members that were founding sponsors/partners of the CSULA ECST Professional Practice Program.

CSULA strives to be recognized as one of the forefront universities for providing corporate partners/investors with their highest return on investment in sponsored projects, research, student programs and recruitment. Corporations are invited to become a corporate sponsor of the Strategic Alliance Initiative at a cost of $5,000 - $25,000 to support the yearlong Corporate Partnering Program. In addition, they are requested to participate in one or more of the programs offered below by College of Engineering, Computer Science, and Technology at CSULA at an additional cost:

1. Undergraduate Professional Practice Program
2. Graduate Professional Practice Program
3. Summer Professional Practice Program
4. Corporate Scholars Program
5. Executives in Residence
6. Undergraduate Professional Practice Program: The purpose of the yearlong Professional Practice Program is to provide students with a capstone experience, in which students apply their theoretical knowledge to real applications. The current structure of the program exposes students to an industry setting, where students work with a real client (the company or industry partner) to develop a client-defined product. This product may be a physical prototype, software package, or operational algorithm. Regardless of project type, student teams are expected to meet the needs of their client, and deliver a product at the end of the academic year. Projects involve teams of four or five engineering/computer science, or technology students, and a faculty advisor working on a real customer problem for a full academic year (1200 hour minimum). Faculty and staff support the efforts of the student-led professional practice teams that solve the problems for the customer. The sponsor will have full use of the results.

Several elements make these projects more like an actual work experience. First, the industrial partner specifies the open-ended problem. It is a real problem that needs to be solved. Second, the team is self managed by the students.  Although there is a faculty advisor and a recognized student team leader, every student has leadership roles and the responsibility to make sure the team functions well.  This simulates many work situations. Finally, the industrial liaison is the customer for the team.

 The team must interact with the customer weekly as they plan the project to be sure that the goals they set are relevant to the industrial problem.  They will present their plan and results in meetings with the liaison.  They will negotiate solution, timing and features. They will react to changing information as the year progresses. These skills, negotiating, project planning, presenting, adjusting to changing conditions, and writing reports are all needed in the workplace, but often are not sufficiently taught to undergraduate engineers. The Professional Practice project is much more like an industrial experience than any other course situation. Students are exposed to the skills required to be a professional engineer.

A self-sustaining exemplar Professional Practice Program allows the College of Engineering, Computer Science, and Technology at CSULA to join a small but elite group of colleges and universities such as Harvey Mudd and Olin that are recognized leaders in professional practice preparation for graduating engineers. Sponsors are asked to provide funding in the amount of $25,000, per project and provide a stakeholder liaison to have weekly contacts with the team. Sponsors receive full use of the results produced by their student team.

1. Graduate Professional Practice Program: The graduate professional practice program is designed to solve complex engineering problems and provide graduate students an experience that challenges them to demonstrate their ability to engineer, design, research and develop. Students are expected to spend a considerable amount of time conducting literature reviews, designing, building, collecting, analyzing data and building prototypes before presenting their findings in written and oral formats

To provide the students with a meaningful experience that will allow them to be on the fast track to becoming industry leaders, the College of Engineering, Computer Science, and Technology invites corporate sponsors to play an essential role in shaping the project, in selecting the students and identifying the advisor.

There are a few elements that are essential to the success of the Graduate Professional Practice Program. First, the open-ended problem comes from an industrial partner. It is a real problem that needs to be solved. Second, the team is selected from a group of elite graduate students by the industrial sponsor. Finally, the advisor is a senior individual in the sponsoring company and is a stakeholder in the results produced by students. The advisor serves as the mentor and customer to the student. The program provides students relevant industry experiences specific to the needs of the industry sponsor.

Sponsors are asked to provide funding in the amount $40,000.00 for two students and $10,000.00 per additional student. They also work with the college to identify the appropriate advisor, student, and project. Students who participate in these projects will receive up to a $5,000 stipend. These projects can start any time during the calendar year, and typically last 12 months.

1. Summer Quarter Professional Practice Program: The objective of the summer professional practice program is to give students practical training before they embark on the capstone project. Students are expected to attend a two-week course on design and work 40 hours a week for 9 weeks on a Summer Professional Practice Project for the sponsor. Students receive credit for the experience through our cooperative education program.

Companies are asked to provide the students with an open-ended design project with real deliverables. Furthermore, companies are able to select a minimum of two high-caliber students from the Corporate Scholars. The students may work on a team-based project or an individual project as defined by the company either at the corporation or at the university. Companies are requested to provide each student or team with a corporate mentor/liaison. The role of the corporate mentor/liaison is to guide the students through the open-ended design problem and provide mentoring to the students about the corporation.

Sponsoring companies are asked to contribute a minimum of $25,000 to the University that will support course tuition, stipends, and overall program support for two students. Additional students can be added at a cost of $12,500.00 each. The University can incorporate limited student training in preparation for their Summer Professional Practice positions. .

1. Corporate Scholars Program: The objective of the Corporate Scholars Program is to establish the College of Engineering, Computer Science and Technology (ECST) at Cal State, Los Angeles as the “go-to” university for recruiting, retaining and graduating the highest-potential, industry-ready engineering and computer science students. In addition to a focus on women and underrepresented minority students, a distinguishing feature is the extensive involvement of corporations and student organizations in developing a world class experiential program that compliments the Professional Practice Program described earlier. As a result, a student council was formed, comprised of students from each Engineering, Computer Science, and Technology discipline. All sponsors are honored at Corporate Scholars Day/ Strategic Alliance Meeting. A key element of this day is the one-on-one networking sponsors will have with their scholarship recipients and scholars within the college. The ECST student council along with its 23 student organizations focuses on developing various activities and events in collaboration with their corporate partners. Each year, the ECST student council hosts Engineering Week, ECST Career Fair, and Career Awareness Day.

Career Awareness Day aims to present to minority students a wide array of career possibilities in the engineering, computer science, and technology fields. CSULA is the only minority-serving institution (MSI) in the western United States with an ABET accredited engineering program. Hispanics and African Americans constitute about 60% of the enrollment. With that said, we feel that this event is necessary because role models in the technical fields are not readily accessible to the population of students that we serve.

Corporate partners are asked to contribute a minimum of $9,800 to a scholarship pool and $2,000 for student organizations to offset the cost of organizing the activities above and other student-related activities. Ongoing support of this program ensures that sponsors have access to all student organizations on campus including SWE, SHESS, NSBE, Tau Beta Pi, etc.

Exceptional benefits begin accruing to corporate sponsors immediately. They have the opportunity to establish relationships with a very bright and motivated contingent of current engineering and computer science and technology students. Active participation in the ongoing development of this exemplar program will increasingly assure that CSULA will provide an important cost-effective solution for each corporate partner/sponsor in achieving its recruiting goals.

1. Executives in Residence: The Executives in Residence Program aims to integrate executives from corporations and government into the curriculum at CSULA. Executives in Residence work full and part-time teaching classes, conducting research, and mentoring students. Executives in Residence also mentor graduate and undergraduate Professional Practice projects.

The knowledge executives have in their respective fields through their certification process and industry experience is an invaluable asset to the college and the students. Their participation directly impacts the mission of the College of ECST—to provide our students with an applied Engineering, Computer Science, and Technology experience.

College Industry Advisory Board

In addition to departmental advisory boards, the college programs are supported and guided by an active College Industry Advisory Board (IAB).  The College IAB is comprised of twenty-five high-level engineering executives, each representing a major local engineering employer.  The Board meets four times a year to provide advice and guidance in areas such as industry needs, curriculum, and organizational management.  The IAB also helps the College through monetary and in-kind donations such as equipment, furniture, scholarships, and funding for technical projects.  Because of their close relationship with the College, Board member companies are eager to recruit our students.  To accomplish this, the companies participate in on-campus industry career days, conduct on-campus recruiting in the Career Center, and cultivate relationships with students through summer internships and part-time jobs.

The names, positions, and organizations of the College’s current IAB membership is given below in Table 5.1.

| Name | Company | Position |
| --- | --- | --- |
| **Andrew Bicos, Ph.D.** | The Boeing Company | Director Materials, Structures & Mfg. Tech. Thrust |
| **Andrew Meyer** | American Honda Motor Co., Inc. | Assistant Manager, Training Group |
| **Charlie Volk, Ph.D.** | Northrop Grumman Corporation  | Vice President and Chief Technologist  |
| **Juan Rivera Ph.D.**  | Northrop Grumman Corporation  | M1 Technology Director, Aerospace Systems |
| **Dan Gonzalez** | Biosense Webster Inc. | Quality Engineering Manager & MBB |
| **Deigo Cadena** **(Alumnus)** | County of L.A., Dept of Public Works | Senior Manager |
| **Derrick Hamilton****(Alumnus)** | SBC | Vice President, Special and Data Group |
| **Horacio Saavedra** **(Alumnus)** | Northorp Grumman Corporation  | Sr. Business Manager Program Systems, Planning & Control |
| **James A. Kelly**  | Southern California Edison | (Retired) Vice President, SCE |
| **James Van Ackeren** | Honeywell International Inc. | Site Engineering Leader |
| **Jim Eby**  | (retired) Advanced Bionics  | (retired) Vice President, Operations  |
| **Joe M. Rivera** | Sempra Energy Utilities | Director of Engineering and Technical Services |
| **John Larson**  | Pratt and Whitney Rocketdyne  | Senior Manager |
| **John Mastrototaro, Ph.D.** | Medtronic  | Vice President, Global Research and Development |
| **John Norin**  | DIRECTV | Vice President Technology & Ventures Group  |
| **Steve Dulac** | DIRECTV | Director, DIRECTV Engineering |
| **Jorge Ramirez****(Alumnus)** | Heateflex | Senior Research Scientist |
| **Ken Dozier****(Alumnus)** | USC, School of Engineering | Executive Director WESRAC USC Viterbi School of Engineering |
| **Kenneth Johnson, Ph.D.**  | Raytheon | Executive Director, Technology Transfer Center |
| **Kevin Franklin** | Institute for Computing in Humanities, Arts and Social Sciences (iCHASS)  | Executive Director |
| **Allyson D. Yarbrough, Ph.D.** | The Aerospace Corporation | Associate Principal Director, EHF Systems, MILSATCOM Division |
| **Marilee J. Wheaton**  | The Aerospace Corporation | Executive Director, The Aerospace Institute  |
| **Michael R. Montoya**  | Southern California Edison | Director, Grid Advancement, Transmission and Distribution |
| **Munir Sindir, Ph.D.** | Pratt and Whitney Rocketdyne  | Chief Engineer  |
| **Raymond G. Mellado**  | Great Minds in STEM | Founder and Chairman, Great Minds in STEM |
| **Stephen Ehret, PE, DEE, F.ASCE (Alumnus)**  | Naval Facilities Engineering Services Center | Director, Antiterrorism and Force Protection Programs |
| **Raymond Harlow,CPMR**  | Young & Company | Field Sales and Support |
| **William H. Mateer II, P.E. (Alumnus)** | Jet Propulsion Laboratory  | Manager, Sub-Orbital Instruments Office |
| **Jerry Givens** | Parsons Brinkerhoff | Senior Vice President |
| **Dianne Costlow** | NSWC Corona Division  | Deputy Division Technical Director |
| **Dr. William H. Luebke, Ph.D.** | NSWC Corona Division  | NSWC Corona Division Technical Director |
| **Gerrit Van Ommering** | Space Systems Loral | Exec Director, Technology Programs |
| **Derrick Waters** | UPS | Director of Engineering for Central CA District |
| **Ignacio Roman** | AECOM | LA Operations Manager  |

**Table 5.1:IAB Membership**

## Budget allocations and actual Expenditures for the College

Budget allocations for the College are derived from the budget allocation the campus receives from the CSU system. The CSU system budget primarily comes from the State of California. Campus budget allocations are tied to campus enrollment targets. The budget and enrollment history since AY ’09-’10 is briefly described below.

CSULA receives its annual budget allocation from the California State University (CSU) Chancellor’s Office, which is comprised of [an allocation from the State of California](http://www.calstate.edu/budget/fybudget/2011-2012/documentation/2-marginal-cost-of-instruction-table.shtml) along with [tuition and fees](http://www.calstate.edu/budget/fybudget/2012-2013/documentation/14-mandatory-fees-table.shtml) collected from students.  While the campus is given planning targets before the new academic year, the determination of the final budget for the CSU system is often not finalized until after the fiscal year has already begun. Once the allocation from the CSU has been set, the budget allocation to Academic Affairs is derived from the campus budget planning process in accordance with [Administrative Procedure 212](http://www.calstatela.edu/univ/admfin/procedures/212/212.pdf).

In summer 2009, both the campus, and the Division of Academic Affairs were challenged with a 20% budget reduction. This drastic budget reduction for 2009-10 was mitigated by furloughs, layoffs, elimination of vacant positions and the use of onetime funds. The campus budget was reduced to $192 million, of which $30 million was set aside for state university grants. At the same time, enrollment was reduced by 6% to 17,769 full-time equivalent resident students (FTES) and the campus achieved 95.5% of this enrollment target. In the fiscal year 2010-11, the campus budget was restored by 8% to $209 million, of which $32 million was set aside for state university grants.  This restoration was due to one-time federal ARRA funds that the CSU system received and an increase in student fees.  The CSU system increased CSULA’s enrollment target mid-year to 16,350 FTES.  The actual enrollment the campus achieved was 97.9% of the mid-year target.  In fiscal year 2011-12, through the use of one-time funds and another student fee increase the campus budget was increased by 1% from the prior year to $211 million, of which $42 million was set aside for state university grants. The campus enrollment target remained constant at 16,350 FTES, however the actual enrollment achieved was 102.7% over this target.  The CSU system is anticipating an additional $250 million cut to the budget for 2012-13 if the Governor’s November ballot initiative to increase taxes doesn’t pass.  This would result in over a $1 billion cut to the CSU general fund budget since fiscal year 2009-10.  At present the 2012-13 enrollment target for the campus will remain flat in comparison to 2011-12.  Due to the budget uncertainty and continuing decreases, in an unusual move, all CSU admission decisions for 2013-14 are on hold until after the November elections.

These budget reductions in the CSU coupled with fluctuating enrollment targets, set by the CSU, present a challenging set of planning parameters, which, when coupled with the mandate to improve the graduation rate by 9.5% beginning with the class of fall of 2009, have brought an unparalleled level of complexity to academic planning in the CSU system and at Cal State, Los Angeles.

Budget allocation, expenditures and enrollment information for the College are described below in Table 6.1. Detailed budget information is published in the [year end budget report.](http://www.calstatela.edu/univ/budget/year_end_rep_0910.php)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | ECST Budget  | ECST Expenditure total | ECST annualized FTES target  |  ECST annualized FTES actual |
|   |   |   |  |  |
| 2009-10 | 7,527,134.43 | 7,949,346.39 | 894 | 948 |
|   |   |   |   |   |
| 2010-11 | 8,274,786.86 | 8,725,834.81 | 886 | 875 |
|   |   |   |   |   |
| 2011-12 | 7,314,336.70 | 8,515,659.52\* | 952 | 1006 |

**\* Forecast based on projects through June 30, 2012**

**Table 6.1: College Expenditures and Enrollment (2009-2012)**

Table 6.1 shows the allocation of the general fund budget to the College from Academic Affairs along with College enrollment figures. This budget allocation is based on an annual enrollment target for the College that is set in the fall. Enrollment has fluctuated over the past three years, with the highest enrollment in 2011-12. One time university reserves have been used to make up the shortfall between the budget allocation and the expenditure total. The expenditures include salaries, communications, travel, and operations. Note that these expenditures do not include those for equipment and other infrastructural needs (see Table 6.6).

The expenditures for each department during the past two fiscal years are described in Tables 6.2 – 6.5 below.

Table 6.6 shows equipment purchased for each department during 2007-2011. The sources of financial support for equipment include permanent (recurring) State Funds, temporary (One-Time) Funds, Auxiliary Funds, and Gift Funds. Auxiliary Funds are generated either through grant activities or Senior Design Project contracts. There has been a greater reliance on One Time Funds and Auxiliary Grant Funds when compared to the State Funds. Note that the One Time Funds of 1.2 Million Dollars was allocated to the College by the Office of the President. These funds were expended over a three year period between the 2009 and 2011fiscal years.

|  |  |  |
| --- | --- | --- |
| Expenditure Category | Expenditures FY 2010-2011 | Expenditures\*2011-2012 |
| Instructional Faculty |  $ 575,473.65  |  $ 482,298.25  |
| Non-Faculty |  $ 137,843.45  |  $ 83,899.68  |
| Student Assistant |  $ 475.00  |  $ 5,800.00  |
| Benefits |  $ 209,017.01  |  $ 184,176.24  |
| Communication |  $ 316.01  |  $ 241.01  |
| Travel |  $ 5,650.68  |  $ 1,741.05  |
| Misc Operating Exp |  $ 5,203.46  |  $ 15,378.61  |
| Total: |  **$ 933,979.26**  |  **$ 773,534.84**  |

**\* Forecast based on projects through June 30, 2012**

**Table 6.2: Department of Civil Engineering -Expenditures (2010-2012)**

|  |  |  |
| --- | --- | --- |
| Expenditure Category | Expenditures FY 2010-2011 | Expenditures\*2011-2012 |
| Instructional Faculty |  $ 925,025.75  |  $ 862,509.33  |
| Non-Faculty |  $ 94,468.32  |  $ 95,145.60  |
| Student Assistant |  |  $ -  |
| Benefits |  $ 410,384.50  |  $ 393,111.55  |
| Communication |  $ 1,155.15  |  $ 1,264.47  |
| Travel |  $ 6,649.61  |  $ 7,721.33  |
| Misc Operating Exp |  $ 5,107.13  |  $ 4,847.23  |
| Total: |  $ 1,442,790.46  |  $ 1,359,752.28  |

**\* Forecast based on projects through June 30, 2012**

**Table 6.3: Department of Electrical and Computer Engineering -Expenditures (2010-2012)**

|  |  |  |
| --- | --- | --- |
| Expenditure Category | Expenditures FY 2010-2011 | Expenditures\*2011-2012 |
| Instructional Faculty |  $ 809,223.66  |  $ 837,914.27  |
| Non-Faculty |  $ 83,738.95  |  $ 79,939.47  |
| Student Assistant |  |  $ -  |
| Benefits |  $ 292,396.43  |  $ 322,945.11  |
| Communication |  $ 317.26  |  $ 236.65  |
| Travel |  $ 3,442.38  |  $ 5,878.05  |
| Misc Operating Exp |  $ 35,040.51  |  $ 9,086.69  |
| Total: |  $ 1,224,159.19  |  $ 1,256,000.24  |

**\* Forecast based on projects through June 30, 2012**

**Table 6.4: Department of Mechanical Engineering - Expenditures (2010-2012)**

|  |  |  |
| --- | --- | --- |
| Expenditure Category | Expenditures FY 2010-2011 | Expenditures\*2011-2012 |
| Instructional Faculty |  $ 833,978.91  |  $ 838,063.39  |
| Non-Faculty |  $ 104,367.88  |  $ 105,287.16  |
| Student Assistant |  $ 780.00  |  $ 1,840.00  |
| Benefits |  $ 339,241.56  |  $ 350,607.89  |
| Communication |  $ 291.18  |  $ 279.13  |
| Travel |  $ 7,760.50  |  $ 7,336.00  |
| Misc Operating Exp |  $ 687.50  |  $ 4,166.53  |
| Total: |  $ 1,287,107.53  |  $ 1,310,278.84  |

**\* Forecast based on projects through June 30, 2012**

**Table 6.5: Department of Computer Science - Expenditures (2010-2012)**

|  |  |
| --- | --- |
|   | Equipment Expenditures (State/Auxiliary) |
| Department | **2007** | **2008** | **2009** | **2010** | **2011** |
| Civil Engineering |  $ 3,391.83  |  $ -  |  $ -  |  $ -  |  $ -  |
| Computer Science |  $ -  |  $ -  |  $ -  |  $ -  |  $ -  |
| Electrical Engineering |  $ 5,183.94  |  $ 33,000.02  |  $ -  |  $ 14,876.61  |  $ -  |
| Mechanical Engineering |  $ -  |  $ -  |  $ -  |  $ -  |  $ -  |
| Technology |  $ -  |  $ -  |  $ -  |  $ -  |  $ -  |
| All Disciplines\* |  $ 79,710.50  |  $ 46,197.78  |  $84,829.08  |  $ 59,775.88  |  $ -  |
| *TOTAL* |  $ 88,286.27  |  $ 79,197.80  |  $84,829.08  |  $ 74,652.49  |  $ -  |
|  |
|   |  **Equipment Expenditures (One Time Funds)**  |
| Department | **2007** | **2008** | **2009** | **2010** | **2011** |
| Civil Engineering |  $ -  |  $ -  |  $ -  |  $149,722.22  |  $ -  |
| Computer Science |  $ -  |  $ -  |  $ 13,521.31  |  $ 6,727.68  |  $ 2,686.93  |
| Electrical Engineering |  $ -  |  $ -  |  $ -  |  $ 35,891.71  |  $ -  |
| Mechanical Engineering |  $ -  |  $ -  |  $ -  |  $250,630.42  |  $ 29,467.88  |
| Technology |  $ -  |  $ -  |  $ -  |  $ 9,526.22  |  $ 15,818.11  |
| All Disciplines\* |  $ -  |  $ -  |  $419,987.50  |  $262,923.28  |  $ 3,478.18  |
| *TOTAL* |  $ -  |  $ -  |  $433,508.81  |  $715,421.53  |  $ 51,451.10  |
|  |
|   | **SUMMARY OF ALL EQUIPMENT EXPENDITURES** |
| Department | **2007** | **2008** | **2009** | **2010** | **2011** |
| Civil Engineering |  $ 3,391.83  |  $ -  |  $ -  |  $149,722.22  |  $ -  |
| Computer Science |  $ -  |  $ -  |  $ 13,521.31  |  $ 6,727.68  |  $ 2,686.93  |
| Electrical Engineering |  $ 5,183.94  |  $ 33,000.02  |  $ -  |  $ 50,768.32  |  $ -  |
| Mechanical Engineering |  $ -  |  $ -  |  $ -  |  $250,630.42  |  $ 29,467.88  |
| Technology |  $ -  | $ -  |  $ -  |  $ 9,526.22  |  $ 15,818.11  |
| All Disciplines\* |  $ 79,710.50  |  $ 46,197.78  |  $504,816.58  |  $322,699.16  |  $ 3,478.18  |
| *GRAND TOTAL* |  $ 88,286.27  |  $ 79,197.80  |  $518,337.89  |  $790,074.02  |  $ 51,451.10  |

\*All disciplines refer to items used by all departments in addition to those specific to certain disciplines.

**Table 6.6: Equipment Expenditures (2007-2011)**

1. **Credit Unit**

California State University operates on the quarter system. One credit hour represents one class hour per week (50 minutes) or three laboratory hours per week (2 hours, 30 minutes). One quarter consists of 11-weeks, including final examinations. One academic year is usually defined by three quarters. However, the university offers four quarters every year.

1. **Program Enrollment and Personnel Data Tables**

Program enrollment/degree data and Personnel data for the various departments are listed in the tables below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Academic Year | Enrollment Count(Fall Quarter) | Total | Total |  |
| Undergrad | Grad |  |
|  |  |  |
|  |  | Degrees Awarded\* |
| FR | SO | JR | SR | PBAC | GRAD |  |  | Bachelors | Masters |
| 2011-12 | FT | 112 | 39 | 70 | 118 | 1 | 19 | 340 | 19 | 13 | 5 |
|  | PT | 7 | 4 | 17 | 37 | 1 | 40 | 66 | 40 |  |  |
| 2010-11 | FT | 85 | 51 | 44 | 109 | 0 | 31 | 289 | 31 | 35 | 24 |
|  | PT | 5 | 7 | 24 | 43 | 2 | 28 | 81 | 28 |  |  |
| 2009-10 | FT | 61 | 35 | 42 | 83 | 1 | 23 | 222 | 23 | 27 | 21 |
|  | PT | 6 | 13 | 18 | 46 | 5 | 39 | 88 | 39 |  |  |
| 2008-09 | FT | 69 | 36 | 42 | 67 | 2 | 12 | 216 | 12 | 29 | 19 |
|  | PT | 11 | 5 | 7 | 35 | 5 | 39 | 63 | 39 |  |  |
| 2007-08 | FT | 72 | 28 | 26 | 59 | 2 | 19 | 187 | 19 | 38 | 18 |
|  | PT | 7 | 4 | 11 | 33 | 3 | 37 | 58 | 37 |  |  |

**Table 8.1: Program Enrollment and Degree Data for Civil Engineering**

\*Note: (i) Degrees awarded is queried from CMS database

(ii) Degrees awarded in 2011-12 include Fall 2011 only.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Academic Year | Enrollment Count(Fall Quarter) | Total | Total |  |
| Undergrad | Grad |  |
|  |  |  |
|  |  | Degrees Awarded\* |
| FR | SO | JR | SR | PBAC | GRAD |  |  | Bachelors | Masters |
| 2011-12 | FT | 77 | 17 | 41 | 92 | 3 | 46 | 230 | 46 | 6 | 40 |
|  | PT | 2 | 3 | 10 | 23 | 0 | 75 | 38 | 75 |  |  |
| 2010-11 | FT | 46 | 25 | 38 | 87 | 2 | 59 | 198 | 59 | 42 | 110 |
|  | PT | 1 | 5 | 8 | 31 | 0 | 99 | 45 | 99 |  |  |
| 2009-10 | FT | 43 | 30 | 36 | 93 | 4 | 90 | 206 | 90 | 37 | 90 |
|  | PT | 3 | 3 | 7 | 23 | 2 | 133 | 38 | 133 |  |  |
| 2008-09 | FT | 53 | 22 | 28 | 86 | 3 | 84 | 192 | 84 | 45 | 63 |
|  | PT | 11 | 3 | 15 | 28 | 1 | 131 | 58 | 131 |  |  |
| 2007-08 | FT | 54 | 31 | 27 | 82 | 1 | 59 | 195 | 59 | 56 | 50 |
|  | PT | 6 | 3 | 9 | 42 | 0 | 90 | 60 | 90 |  |  |

**Table 8.2: Program Enrollment and Degree Data for Electrical and Computer Engineering**

\*Note: (i) Degrees awarded is queried from CMS database

(ii) Degrees awarded in 2011-12 include Fall 2011 only.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Academic Year | Enrollment Count(Fall Quarter) | Total | Total |  |
| Undergrad | Grad |  |
|  |  |  |
|  |  | Degrees Awarded\* |
| FR | SO | JR | SR | PBAC | GRAD |  |  | Bachelors | Masters |
| 2011-12 | FT | 104 | 49 | 52 | 125 | 3 | 15 | 333 | 15 | 7 | 20 |
|  | PT | 11 | 5 | 10 | 15 | 3 | 30 | 44 | 30 |  |  |
| 2010-11 | FT | 74 | 49 | 41 | 100 | 2 | 28 | 266 | 28 | 31 | 36 |
|  | PT | 3 | 6 | 12 | 19 | 3 | 32 | 43 | 32 |  |  |
| 2009-10 | FT | 63 | 28 | 34 | 77 | 1 | 32 | 203 | 32 | 29 | 20 |
|  | PT | 14 | 9 | 10 | 27 | 6 | 41 | 66 | 41 |  |  |
| 2008-09 | FT | 56 | 37 | 36 | 39 | 3 | 27 | 171 | 27 | 29 | 24 |
|  | PT | 9 | 6 | 8 | 44 | 1 | 34 | 68 | 34 |  |  |
| 2007-08 | FT | 54 | 23 | 26 | 66 | 3 | 19 | 172 | 19 | 30 | 14 |
|  | PT | 9 | 8 | 9 | 32 | 4 | 31 | 62 | 31 |  |  |

**Table 8.3: Program Enrollment and Degree Data for Mechanical Engineering**

\*Note: (i) Degrees awarded is queried from CMS database

(ii) Degrees awarded in 2011-12 include Fall 2011 only.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Academic Year | Enrollment Count(Fall Quarter) | Total | Total |  |
| Undergrad | Grad |  |
|  |  |  |
|  |  | Degrees Awarded\* |
| FR | SO | JR | SR | PBAC | GRAD |  |  | Bachelors | Masters |
| 2011-12 | FT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
|  | PT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 2010-11 | FT | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 7 | 0 |
|  | PT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 2009-10 | FT | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 0 |
|  | PT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 2008-09 | FT | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 |
|  | PT | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |  |  |
| 2007-08 | FT | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
|  | PT | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |  |  |

**Table 8.4: Program Enrollment and Degree Data for Engineering (Special Options)**

\*Note: (i) Degrees awarded is queried from CMS database

(ii) Degrees awarded in 2011-12 include Fall 2011 only.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Academic Year | Enrollment Count(Fall Quarter) | Total | Total |  |
| Undergrad | Grad |  |
|  |  |  |
|  |  | Degrees Awarded\* |
| FR | SO | JR | SR | PBAC | GRAD |  |  | Bachelors | Masters |
| 2011-12 | FT | 82 | 30 | 37 | 63 | 0 | 38 | 212 | 38 | 5 | 28 |
|  | PT | 5 | 4 | 16 | 35 | 2 | 55 | 62 | 55 |  |  |
| 2010-11 | FT | 77 | 36 | 35 | 53 | 1 | 47 | 202 | 47 | 14 | 33 |
|  | PT | 0 | 3 | 7 | 34 | 2 | 78 | 46 | 78 |  |  |
| 2009-10 | FT | 73 | 28 | 26 | 53 | 3 | 44 | 183 | 44 | 22 | 32 |
|  | PT | 12 | 3 | 6 | 35 | 4 | 99 | 60 | 99 |  |  |
| 2008-09 | FT | 65 | 20 | 38 | 50 | 2 | 50 | 175 | 50 | 22 | 24 |
|  | PT | 8 | 3 | 12 | 43 | 5 | 110 | 71 | 110 |  |  |
| 2007-08 | FT | 49 | 20 | 27 | 58 | 2 | 40 | 156 | 40 | 18 | 15 |
|  | PT | 8 | 5 | 10 | 37 | 6 | 90 | 66 | 90 |  |  |

**Table 8.5: Program Enrollment and Degree Data for Computer Science**

\*Note: (i) Degrees awarded is queried from CMS database

(ii) Degrees awarded in 2011-12 include Fall 2011 only.

|  |  |  |
| --- | --- | --- |
|  | HEAD COUNT | FTE2 |
| **FT** | **PT** |
| Administrative3 | 1 |  | 0.53 |
| Faculty (tenure-track) | 6 |  | 6.47 |
| Other Faculty (excluding student Assistants) |  | 11 | 2 |
| Student Teaching Assistants |  |  2 |  1 |
| Student Research Assistants |  | 24 | 12 |
| Technicians/Specialists | 1.25 |  | 1.25 |
| Office/Clerical Employees | 1 |  | 1 |
| Others4A. Proposed Replacement Faculty in next 6 yearsB. Proposed New Faculty in next 6 years | 33 |  | 33 |

**Table 8.6: Personnel Data for Civil Engineering (Year1: Fall 2011)**

1. Data on this table is for Fall 2011 (fall term immediately preceding the visit).

2 For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 24 quarter credit-hours of institutional course work. For faculty members, 1 FTE equals 15 units.

3 Persons holding joint administrative/faculty positions or other combined assignments are allocated to each category according to the fraction of the appointment assigned to that category.

4 Proposed Replacement/New Faculty in the next 6 years.

A. Replacement Faculty

1. Water Resources Engineering

2. Structural Engineering

3. Asphalt Pavement Design and Geomatics/Remote Sensing

B. New Faculty

1. Ocean Engineering

2. Construction Engineering/Management

3. Geotechnical Engineering

|  |  |  |
| --- | --- | --- |
|  | HEAD COUNT | FTE2 |
| **FT** | **PT** |
| Administrative3 | 1 |  | 0.53 |
| Faculty (tenure-track) | 7 |  | 7.47 |
| Other Faculty (excluding student Assistants) |  | 12 | 2.29 |
| Student Teaching Assistants |  | 1 |  |
| Student Research Assistants |  | 46 | 18 |
| Technicians/Specialists | 1.25 |  | 1.25 |
| Office/Clerical Employees | 1 |  | 1 |
| Others4A. Proposed Replacement Faculty in next 6 yearsB. Proposed New Faculty in next 6 years |  5 5 |  |  5 5 |

**Table 8.7: Personnel Data for Electrical and Computer Engineering**

**(Year1: Fall 2011)**

1. Data on this table is for Fall 2011 (fall term immediately preceding the visit).

2 For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 24 quarter credit-hours of institutional course work. For faculty members, 1 FTE equals 15 units.

3 Persons holding joint administrative/faculty positions or other combined assignments are allocated to each category according to the fraction of the appointment assigned to that category.

4 Proposed Replacement/New Faculty in the next 6 years.

A. Replacement Faculty

1. Electric Power Systems

2. Electronics with Emphasis on Power Electronics and Electronic Drives

3. Communications and Signal processing

4. Systems Engineering

5. Electronics, VLSI and NanoElectronics

B. New Faculty

1. Biomedical Engineering

2. A8.hoc and distributed sensor Networking

3. Embedded Systems

4. HPC and Cloud Computing

5. Distributed Robotics

|  |  |  |
| --- | --- | --- |
|  | HEAD COUNT | FTE2 |
| **FT** | **PT** |
| Administrative3 | 1 |  | 0.53 |
| Faculty (tenure-track) | 9 |  | 9.47 |
| Other Faculty (excluding student Assistants) |  | 12 | 1.43 |
| Student Teaching Assistants |  | 3 |  |
| Student Research Assistants |  |  |  |
| Technicians/Specialists | 1.25 |  | 1.25 |
| Office/Clerical Employees | 0 |  | 0 |
| Others4A. Proposed Replacement Faculty in next 6 yearsB. Proposed New Faculty in next 6 years |  3 3 |  |  3 3 |

**Table 8.8: Personnel Data for Mechanical Engineering (Year1: Fall 2011)**

1. Data on this table is for Fall 2011 (fall term immediately preceding the visit).

2 For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 24 quarter credit-hours of institutional course work. For faculty members, 1 FTE equals 15 units.

3 Persons holding joint administrative/faculty positions or other combined assignments are allocated to each category according to the fraction of the appointment assigned to that category.

4 Proposed Replacement/New Faculty in the next 6 years.

A. Replacement Faculty

1. Manufacturing

2. Mechanics

3. Aerospace

B. New Faculty

1. Materials (Fracture, surface treatment, processing)

2. Biomedical (Biomaterials and Computer Modeling of Biological Systems)

3. Sustainability (Energy/Environmental Concerns)

|  |  |  |
| --- | --- | --- |
|  | HEAD COUNT | FTE2 |
| **FT** | **PT** |
| Administrative3 | 1 (Share with ME) |  | 0.53 (Share with ME) |
| Faculty (tenure-track) | 9 (Share with ME) |  | 9.47 (Share with ME) |
| Other Faculty (excluding student Assistants) |  | 12 (Share with ME) | 1.43 (Share with ME) |
| Student Teaching Assistants |  |  |  |
| Student Research Assistants |  |  |  |
| Technicians/Specialists | 1.25 (Share with ME) |  | 1.25 (Share with ME) |
| Office/Clerical Employees | 0 |  | 0 |
| Others4A. Proposed Replacement Faculty in next 6 yearsB. Proposed New Faculty in next 6 years | 3 (Share with ME)3 (Share with ME) |  | 3(Sharewith ME)3 (Share with ME) |

**Table 8.9: Personnel Data for Engineering – Special Options (Year1: Fall 2011)**

1. Data on this table is for Fall 2011 (fall term immediately preceding the visit).

2 For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 24 quarter credit-hours of institutional course work. For faculty members, 1 FTE equals 15 units.

3 Persons holding joint administrative/faculty positions or other combined assignments are allocated to each category according to the fraction of the appointment assigned to that category.

4 Proposed Replacement/New Faculty in the next 6 years.

A. Replacement Faculty

1. Manufacturing

2. Mechanics

3. Aerospace

B. New Faculty

1. Materials (Fracture, surface treatment, processing)

2. Biomedical (Biomaterials and Computer Modeling of Biological Systems)

3. Sustainability (Energy/Environmental Concerns)

|  |  |  |
| --- | --- | --- |
|  | HEAD COUNT | FTE2 |
| **FT** | **PT** |
| Administrative3 | 1 |  | 0.53 |
| Faculty (tenure-track) | 8 |  | 7.97 |
| Other Faculty (excluding student Assistants) |  | 5 | 1.8 |
| Student Teaching Assistants |  | 3 |  |
| Student Research Assistants |  |  |  |
| Technicians/Specialists | 1.25 |  | 1.25 |
| Office/Clerical Employees | 1 |  | 1 |
| Others4A. Proposed Replacement Faculty in next 6 yearsB. Proposed New Faculty in next 6 years | 22 |  | 2 2 |

**Table 8.10: Personnel Data for Computer Science (Year1: Fall 2011)**

1. Data on this table is for Fall 2011 (fall term immediately preceding the visit).

2 For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 24 quarter credit-hours of institutional course work. For faculty members, 1 FTE equals 15 units.

3 Persons holding joint administrative/faculty positions or other combined assignments are allocated to each category according to the fraction of the appointment assigned to that category.

4 Proposed Replacement/New Faculty in the next 6 years.

A. Replacement Faculty

1. Proposed two Replacement Faculty for Retirement

B. New Faculty

1. Information Technology (Graphics and game programming)

2. Cyber Security (Computer networks, security, assurance)

1. **Future Plans**

ECST began a dialogue between faculty and staff to develop the future plans for the college starting in the Fall 2011. Faculty and Staff worked diligently to develop the plan throughout the 2011-12 academic year to enhance the focus of the college on expanding its current resource base to conduct teaching, research and public service for its bachelors, masters and proposed Ph.D. program in complex systems engineering with the Claremont Graduate University. The plan is entitled ECST 2020. The documents for ECST 2020 are available at the request of the ABET reviewers.