

**CALIFORNIA STATE UNIVERSITY LONG BEACH  
COLLEGE OF ENGINEERING**

**Annual Report on Assessment  
June 1, 2007**

Degree Program Name: **BS in Computer Science**  
Department Name: **Computer Engineering & Computer Science**

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**BS in Computer Science  
Program Outcomes**

The Computer Science graduates will have:

- 1** Competence in applying knowledge of computing and mathematics appropriate to the discipline.
- 2** Competence in analyzing a problem, recognizing ways in which computing technology may contribute to its solution, and identifying and defining the computing requirements appropriate for that solution.
- 3** Competence in designing, implementing, and evaluating a computer-based system, process, component, or program to meet needs, including needs of all potential users of the system.
- 4** Competence in functioning effectively in various team roles, such as leader or member, to accomplish a common goal.
- 5** Competence in understanding one's professional, ethical, and social responsibilities, including professional codes of conduct, techniques for ethical analysis of situations, and one's responsibilities to clients, employers, colleagues, self, the profession, and the public.
- 6** Competence in using spoken, written, and electronic media to communicate effectively in both formal and informal settings with colleagues, technical audiences, and the general public.
- 7** Competence in analyzing the impact of computing on individuals, organizations, and society, including ethical, legal, security, and global policy issues, and competence in applying that analysis when developing computer systems.
- 8** Recognition of the need for, and an ability to engage in, continuing professional development;
- 9** Competence in using current techniques, skills, and tools necessary for computing practice, at a level appropriate for successful entry into the workplace or graduate school.

The following is a partial list of the assessment activities conducted during the past year.

**1. Which student learning outcomes were assessed over the past year?**

**Outcome 7:** Competence in analyzing the impact of computing on individuals, organizations, and society, including ethical, legal, security, and global policy issues, and competence in applying that analysis when developing computer systems.

**2. How was student learning assessed for each outcome?**

<b>Student Learning Outcome</b>	<b>HOW ASSESSED</b>
<b>Outcome 7</b>	<p>Indirect assessment through a comprehensive alumni survey. The survey was mailed to all Computer Science alumni who graduated within the last 10 years.</p> <p>The faculty advisors, who are advising CS students in specific areas of Computer Science are a significant factor in students' understanding of the role of computer scientists as related to Outcome 7. The effectiveness of the advising process was used as a measure of this program outcome.</p> <p>Effectiveness of the advising process was also assessed through interviews with students, and from direct observation by external accreditation evaluators.</p>

3. What were the results of the assessment for each learning outcome?

Student Learning Outcome	RESULTS OF ASSESSMENT
<p><b>Outcome 7</b></p>	<p>One of the important questions in the survey (Question 5) asked the alumni about their assessment of Computer Science faculty. The question was phrased as following:</p> <p><b>Question 5. Please rate your overall satisfaction with Engineering faculty while you were at CSULB.</b></p> <p>(a) Quality and effectiveness of instruction            (b) Knowledge of the subject            (c) Practical experience in the subject            (d) Class organization            (e) Quality of laboratory instruction            (f) Use of technology in instructional techniques            (g) Accessibility to students            (h) Fairness of grading            (i) Concern with student progress            (j) Effectiveness of advising</p> <p>The results of the survey in response to Question 5 are shown in Figure 1. From the figure it is seen that the highest level of dissatisfaction is with the following questions:  <b>(5.i):</b> 46% are either dissatisfied or somewhat satisfied, and  <b>(5.j):</b> 47% are either dissatisfied or somewhat satisfied.            Since questions <b>(5.i)</b> and <b>(5.j)</b> are related to advising, we decided to concentrate on the <i>advising process</i> for the 2006-2007 improvements, as described below.</p>

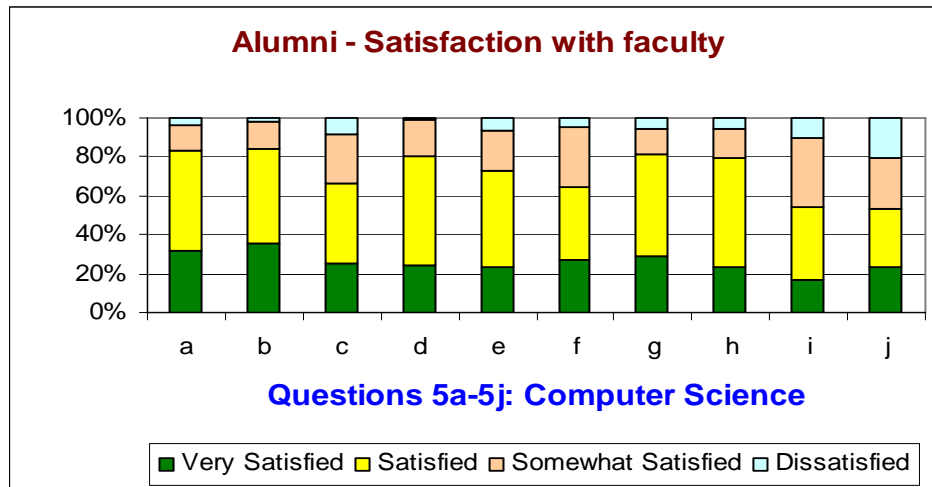


Figure 1: Results of alumni survey for question 5.

#### 4. How were the results used for program improvement?

<b>Student Learning Outcome</b>	<b>PROGRAM IMPROVEMENT</b>
<b>Outcome 7</b>	Measures taken for program improvement are described in the following paragraphs.

#### **Measures taken for program improvement in response to the results of the alumni survey** (Specifically in response to *Question 5*, regarding *advising by Computer Science faculty*).

Using the survey results, and after extensive discussions with CS students, and after consultations between the CS program, the College of Engineering, the University, and advising experts, we identified several areas in our advising process upon which we could improve. Analyzing the advising needs of CS students, we concluded that lower division students (freshmen and sophomores) require a large amount of contact time with an advisor on a continuous basis. The same is true for transfer junior students during their first semester in the program. The need for more contact time is, to a large extent, a result of new students' unfamiliarity with the new environment in a large, and possibly intimidating, campus. We also concluded that advisement for the lower division students should provide orientation and initial guidance, whereas the upper division students' advisement should provide assistance with selection of elective courses and career choices.

In response to these conclusions, the Computer Engineering and Computer Science Department (CECS), drafted a new policy on advising. The new policy has resulted in several new initiatives which were implemented in the Spring 2007 semester. These include:

1. **Introduction of the position of the Student Advising Specialist.** The Student Advising Specialist works exclusively with lower division students and with first-semester transfer juniors. In January 2007 the CECS department hired a Student Advising Specialist, Dan Gould. Mr. Gould is working 30 hours per week (22.5 hours for drop-in advising, and 7.5 hours for appointments), over 12 months, thus ensuring that students have access to his assistance continuously throughout the year. Mr. Gould was hired as a part-time lecturer in the CECS department with his exclusive responsibility being to serve as the Student Advising Specialist.
2. **Review and modification of the responsibilities of the Academic Program Advisors.** The Academic Program Advisors are working exclusively with upper division students, particularly seniors, native juniors, transfer juniors beyond their first semester in the program, and with post-baccalaureate students.
3. **Separation** of the Computer Science from the Computer Engineering advising process. In January 2007 the department designated Dr. Alvaro Monge, a faculty member in CS to be the CS Academic Program Advisor. Dr. Monge receives 4 units of assigned time per semester for his advising activities. During summer, the advising needs of the upper division CS students are satisfied by a CS Academic Program Advisor who is compensated through the summer advising funds provided to the CS program by the University.
4. **Establishment of a mandatory advising meeting** for every CS student, every semester.

5. **Establishment of an average minimum advising time** per student per semester. The work loads of the Student Advising Specialist and the Academic Program Advisor are determined on the basis of enrollment. Through our analysis we established an average requirement of advising contact time of 90 minutes (1.5 hours) per student per semester for all lower division and first-semester transfer juniors. We also established an average requirement of advising contact time of 25 minutes (0.42 hours) per student per semester for upper division students (seniors, native juniors, transfer juniors beyond their first semester and post-baccalaureate students).
6. **Achievement of advising goals.** The following tables 1 and 2, provide enrollment data and advising time calculations, which show that the initiatives as implemented in January 2007, have achieved the advising goals indeed. Table 1 uses the most recent enrolment data available from Fall 2006, to provide a breakdown of enrolment headcounts. Since transfer juniors comprise 50% of the junior class, the junior population has been divided into two equal parts: first-semester transfer juniors and other juniors. Table 2 uses the enrollment data from Table 1 to show that the workloads of the Student Advising Specialist and the Academic Program Advisor, as implemented, are sufficient to achieve, and in fact exceed, the target advising goals of average minimum contact time per student per semester. On the average every CS student advised by Mr. Gould has at least 1.67 contact hours every semester (target was 1.50 hrs per student per semester). Every CS student advised by Dr. Monge has at least 0.46 contact hours every semester (target was 0.42 hrs per student per semester). Overall, every CECS student has on the average 1.01 hrs of contact time per semester, with either the Student Advising Specialist or with the Academic Program Advisor.

<b>CECS Headcount Enrollment (Fall 2006)</b>			
	<b>CS</b>	<b>Computer Engr</b>	<b>CECS Total</b>
<b>Group A</b>			
Freshman	57	99	156
Sophomore	34	30	64
First semester transfer Junior	42	25	67
<b>Subtotal – Group A</b>	<b>133</b>	<b>154</b>	<b>287</b>
<b>Group B</b>			
Other Junior	42	25	67
Senior	189	116	305
Post Baccalaureate	10	4	14
<b>Subtotal – Group B</b>	<b>241</b>	<b>145</b>	<b>386</b>
<b>Total - Groups A &amp; B</b>	<b>374</b>	<b>299</b>	<b>673</b>

Table 1: CECS Headcount Enrollment (Fall 2006)

<b>CECS Advising Contact Time</b>				
<b>Advisor</b>	<b>Advising Time (Hrs per Week)</b>	<b>Advising Time (Hrs per Semester 16 wks)</b>	<b>Advising Hrs per Student per Semester</b>	<b>Target Hrs per Student per Semester</b>
Group A: (Gould)	30	480	1.67	1.50
Group B: CS only (Monge)	7	112	0.46	0.42
Group B: Computer Engr only (Johnson)	5.5	88	0.61	0.42
<b>Average (All CECS)</b>	<b>42.5</b>	<b>680</b>	<b>1.01</b>	

Table 2: CECS Advising Contact Time

- Additional advising** is also provided by all CS faculty members during their scheduled office hours, through a new open-door advising policy. Such advising includes advice in choosing electives, and mentoring in career and graduate study opportunities.

Please send the completed report to your college dean. Please save a copy for your files. If you have any questions or comments, please contact Michelle Saint-Germain at x57094 or msaintg@csulb.edu.