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DRAFT

Report on Results of 2013 Computer Science Senior Exit Survey

- 1. Assessment Objectives:** (1) To determine if our graduating seniors approve of our proposed new computer science program educational objectives ; (2) to determine how well our graduating seniors think they have achieved our student learning outcomes; and (3) to determine what our graduating seniors think about the quality of the computer science program;
- 2. Method(s) of Assessment:** We sent a senior exit survey to all students who planned to graduate from our B.S. in Computer Science program in May 2013. The survey asked students to evaluate our new program educational objectives; to assess how well they achieved each of our student learning outcomes; and asked general questions about their satisfaction with the computer science program. The survey was sent to 55 computer science seniors. Twenty-three seniors completed the survey. The survey instrument used is similar to the instrument that the Department has used for the past several years. Additional questions on program educational objectives and participation in professional and research activities were added. The survey instrument with responses is attached.
- 3. Analysis of the Assessment Results** Highlights of the survey responses are presented here. Detailed summaries of the survey responses are presented in the attached Tables 1-2

Satisfaction with the Proposed Computer Science Program Educational Objectives (Question 7)

CSUN Computer Science Program Educational Objectives: The computer science program at the California State University, Northridge prepares students for life-long careers in computer science or related technical fields; such careers should enable its graduates to make valuable contributions to society and to find satisfaction in their chosen profession. Within a few years of graduation, the graduates of the computer science program are expected to:

- 1. Have a successful professional career in computer science or in related technical fields, or continue their education at the graduate level.*
- 2. Continually improve their professional skills and knowledge to stay current in the field and to attain professional advancement.*

The Senior Exit Survey asked students if they agreed that the proposed Program Educational Objectives (above) for the computer science program were the right ones for the program. Sixty-eight percent of the students strongly agreed or strongly agreed. Another twenty-two percent only partially agreed that these were the right objectives. The reasons given (3 responses) why they only partially agreed were comments that suggested that the department was not currently meeting these objectives. They suggested that the department needs to

revise their curriculum to add more “current” courses to the offerings and to improve the teaching of the courses.

Perceived Level of Achievement of Computer Science Student Learning Outcomes (Question 8)

The Senior Exit Survey asked students to rate the extent to which they agreed that they had met our various student learning outcomes. The rating scale was “strongly agree”, “agree”, “disagree” to “strongly disagree”. On all but two of the outcomes, over seventy five percent of the students agreed or strongly agreed that they had met that student learning outcome. The weakest student learning outcomes using this self-evaluation measure were (1) the ability to “function effectively on teams” (69% agreement) and (2) the ability to “understand professional, ethical, legal, security, and social issues and responsibilities” (70% agreement). See Table 1 for complete results.

Overall Satisfaction with the Computer Science Program (Questions 9 – 13)

The Senior Exit Survey asked students to rate the quality of various aspects of our computer science program on a scale of 1 (Poor), (2) Fair, (3) Good, (4) Very Good to 5 (Excellent). The mean ratings of the quality of our computer science program were in the 2.95 – 3.55 out of 5.0 range (Good - Very Good) for each of the four satisfaction questions. An additional question asked if the computer science program was meeting their needs and expectations the responses. Eighty-five percent of the students responded that the program was meeting their needs and expectations “very well” or “satisfactorily”. Fifteen percent said “not very well” or “poorly”. The students who were not satisfied said that the courses contained “outdated material “ ; there were “unhelpful professors” and there was “no tutoring in advanced classes”. One said that they couldn’t get courses they “liked”. See Table 2 for complete results.

Suggestions for Curriculum Changes from Survey Respondents [Question 14]

Approximately 40 % of the students made suggestions for curriculum changes in the computer science program. The suggestions were to have

- More courses in specialized areas (compilers, parallel programming, operating systems, mobile computing)
- More practical courses (e.g., more courses like COMP 380 and COMP 490)
- Have faculty supervise the team projects in COMP 380 and COMP 490.
- A redesigned database class (COMP 440)
- Less emphasis on mathematics. Make Math 482 to a computer science class.
- Longer open lab hours
- Improve faculty teaching

Extracurricular Professional Development and Research Activities (Questions 15-16)

In order to assess our students’ abilities to engage in continuous professional development, we asked them to list professional development and research activities that they were engaged in at CSUN. The most common activities engaged in are listed below with the percentage of students who mentioned them in parentheses:

- Attend CECS Tech Fest (87%)

- Learned how to use or install new software tools not taught in a course (81%)
- Participated in a research project with other students (57%)
- Participated in a research project with a faculty member (37%)
- Attend professional seminars or workshops (33%)
- Attended career fairs (33%)
- Worked in an internship or paid position that used their technical skills (27%)
- Member of a student professional society (20%)

4. Recommendations for Actions/Changes:

- a. If this was an informal assessment, is there a need to perform formal assessment(s) with respect to this SLO?** This was a formal assessment.
- b. If this was a formal assessment, should it be repeated? If so, when?** We should continue to repeat the senior exit survey annually.
- c. Should changes be made in the way this assessment was done? If so, describe the changes.** This was an online survey of current seniors in the computer science program. Only 23 out of 55 students responded. This is less than a 50% response rate. We need to find ways to improve the response rate.
- d. Should there be any changes in curriculum based on the results of this assessment? If so, describe recommended changes.** Continue to create new courses or update current courses to include new and emerging technologies. Try to get more students involved in research projects and student professional societies. Since 35% of the respondents rated faculty teaching as only fair or poor, we should consider the comments from students about poor teaching quality in the department.
- e. Should any other changes be made?** None noted.

Tables of 2013 Senior Exit Survey Results
(Number of respondents = 23)

Table 1: Evaluation of Achievement of Program Student Learning Outcomes

Question 8: To what extent do you agree that you have demonstrated an ability to	Student Response SA= Strongly Agree A = Agree D= Disagree SD = Strongly Disagree
Apply knowledge of computing and mathematics appropriate to the discipline [SLO a]	SA(30%); A(50%); D(10%); SD(10%)
Analyze a problem, and specify the computing needed to solve the problem [SLO b]	SA(40%); A(40%); D(10%); SD(10%)
Apply knowledge of programming concepts, algorithms and data structures to solve a problem. [SLO c]	SA(30%); A(55%); D(10%); SD(5%)
Design, implement and evaluate software to solve a problem [SLO c]	SA(25%); A(60%); D(5%); SD(10%)
Function effectively on teams[SLO d]	SA(32%); A(37%); D(16%); SD(15%)
Understand professional, ethical, legal, security, and social issues and responsibilities [SLO e]	SA(25%); A(45%); D(15%); SD(15%)
Communicate effectively with a range of audiences [SLO f]	SA(16%); A(68%); D(11%); SD(5%)
Analyze the local and global impact of computing on individuals, organizations, and society [SLO g]	SA(10%); A(70%); D(10%); SD(10%)
Engage in continuing professional development. [SLO h]	SA(20%); A(60%); D(15%); SD(5%)
Use current techniques, skills, and software development tools necessary for programming practice [SLO i]	SA(26%); A(53%); D(16%); SD(5%)
Model and design computer-based systems using tradeoffs involved in design choices. [SLO j]	SA(20%); A(60%); D(15%); SD(5%)
Apply software engineering principles in the construction of complex software systems [SLO k]	SA(20%); A(55%); D(10%); SD(15%)



Table 2: Overall Satisfaction of Students with their Educational Preparation

Rating Overall Satisfaction with the computer science program.	Mean Student Response on Scale of 1 - 5 with 5-Excellent; 4-Very Good; 3- Good;2-Fair; 1-Poor										
Q9: Quality of instruction in computer science classes	Mean: 2.95 % Responding with rating <table border="1" data-bbox="781 558 1338 632"> <thead> <tr> <th>Excellent</th> <th>V.Good</th> <th>Good</th> <th>Fair</th> <th>Poor</th> </tr> </thead> <tbody> <tr> <td>5%</td> <td>40%</td> <td>20%</td> <td>15%</td> <td>20%</td> </tr> </tbody> </table>	Excellent	V.Good	Good	Fair	Poor	5%	40%	20%	15%	20%
Excellent	V.Good	Good	Fair	Poor							
5%	40%	20%	15%	20%							
Q10: Helpfulness and accuracy of advisement from faculty	Mean: 3.1 % Responding with rating <table border="1" data-bbox="781 747 1338 821"> <thead> <tr> <th>Excellent</th> <th>V.Good</th> <th>Good</th> <th>Fair</th> <th>Poor</th> </tr> </thead> <tbody> <tr> <td>5%</td> <td>35%</td> <td>35%</td> <td>15%</td> <td>10%</td> </tr> </tbody> </table>	Excellent	V.Good	Good	Fair	Poor	5%	35%	35%	15%	10%
Excellent	V.Good	Good	Fair	Poor							
5%	35%	35%	15%	10%							
Q11: Timeliness of advisement from faculty(e.g. scheduling an advisement appointment)	Mean: 3.2 % Responding with rating <table border="1" data-bbox="781 1003 1338 1077"> <thead> <tr> <th>Excellent</th> <th>V.Good</th> <th>Good</th> <th>Fair</th> <th>Poor</th> </tr> </thead> <tbody> <tr> <td>10%</td> <td>40%</td> <td>15%</td> <td>30%</td> <td>5%</td> </tr> </tbody> </table>	Excellent	V.Good	Good	Fair	Poor	10%	40%	15%	30%	5%
Excellent	V.Good	Good	Fair	Poor							
10%	40%	15%	30%	5%							
Q12: Ability of department computer labs to support the computer science curriculum	Mean: 3.55 % Responding with rating <table border="1" data-bbox="781 1260 1338 1333"> <thead> <tr> <th>Excellent</th> <th>V.Good</th> <th>Good</th> <th>Fair</th> <th>Poor</th> </tr> </thead> <tbody> <tr> <td>20%</td> <td>30%</td> <td>35%</td> <td>15%</td> <td>0%</td> </tr> </tbody> </table>	Excellent	V.Good	Good	Fair	Poor	20%	30%	35%	15%	0%
Excellent	V.Good	Good	Fair	Poor							
20%	30%	35%	15%	0%							
Q13: Extent to which the computer science program is meeting your needs and expectations	Mean 3.25 % Responding with rating <table border="1" data-bbox="781 1554 1442 1703"> <thead> <tr> <th>Extremely Well</th> <th>Very Well</th> <th>Satisfactorily</th> <th>Not Very Well</th> <th>Poorly</th> </tr> </thead> <tbody> <tr> <td>0%</td> <td>45%</td> <td>40%</td> <td>10%</td> <td>5%</td> </tr> </tbody> </table>	Extremely Well	Very Well	Satisfactorily	Not Very Well	Poorly	0%	45%	40%	10%	5%
Extremely Well	Very Well	Satisfactorily	Not Very Well	Poorly							
0%	45%	40%	10%	5%							


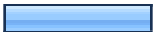



Table 3: Demographics of Respondents.

Demographic Factors	
Major	All respondents are undergraduate computer science majors at CSUN planning to graduate in May, Summer or December 2013.
Age	21- 24 years old(85%) ; 25-30 years old (15%)
Gender	19 male; 4 unknown
Ethnicity	White (35%); Asian(35%); Latino(9%); Native American Indian(4%); Unknown(22%)
International Student Status	74% US; 26% International
Years at CSUN	Mean years at CSUN: 3.8 years
Transfer Student	48% transfer students; 52% native CSUN
Do you have a job?	63% have a job
Hours worked per week	Mean hours for students with jobs: 23 hours
Plan on getting a job that uses your technical skills after graduation.	100% Yes
Do you plan to get an MS degree?	42% Yes; 21% Maybe;
Do you plan to get a Ph.D.?	10% Yes; 26% Maybe;




1. Are you currently a major in the BS in Computer Science program?

		Response Percent	Response Count
Yes		95.7%	22
No		4.3%	1
answered question			23
skipped question			0


2. How many years have you been studying at CSUN?

		Response Percent	Response Count
0 - 1 year		0.0%	0
2 years		26.1%	6
3 years		21.7%	5
4 years		17.4%	4
5 years		17.4%	4
6 years		17.4%	4
More than 6 years.		0.0%	0
answered question			23
skipped question			0

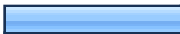

3. When do you plan to graduate?

		Response Percent	Response Count
May 2013		69.6%	16
Summer 2013		17.4%	4
December 2013		13.0%	3
May 2014 or later		0.0%	0
Other		0.0%	0
		answered question	23
		skipped question	0

4. Are you a second bachelor's degree student?

		Response Percent	Response Count
Yes		0.0%	0
No		100.0%	23
		answered question	23
		skipped question	0

5. Are you an international student?


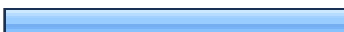
		Response Percent	Response Count
Yes		26.1%	6
No		73.9%	17

If so, what country are you from? 6

answered question 23

skipped question 0

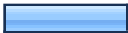




6. Did you enter CSUN as a transfer student?

		Response Percent	Response Count
Yes		47.8%	11
No		52.2%	12

answered question 23

skipped question 0

7. Do you agree that these are the right program educational objectives for the computer science program?

		Response Percent	Response Count
Strongly Agree		18.2%	4
Agree		50.0%	11
Partially Agree		22.7%	5
Disagree		4.5%	1
Strongly Disagree		4.5%	1

If there are program educational objectives that should be added or revised, please comment.

3

answered question	22
skipped question	1

8. To what extent do you agree that you have demonstrated the ability to






	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Count
Apply knowledge of computing and mathematics appropriate to the discipline?	30.0% (6)	50.0% (10)	10.0% (2)	10.0% (2)	20
Analyze a problem and specify computing requirements needed to solve the problem?	40.0% (8)	40.0% (8)	10.0% (2)	10.0% (2)	20
Apply knowledge of programming concepts, algorithms, data structures to solve a problem?	30.0% (6)	55.0% (11)	10.0% (2)	5.0% (1)	20
Design, implement and evaluate software to solve a problem?	25.0% (5)	60.0% (12)	5.0% (1)	10.0% (2)	20
Function effectively on teams?	31.6% (6)	36.8% (7)	15.8% (3)	15.8% (3)	19
Understand professional, ethical, legal, security and social issues and responsibilities?	25.0% (5)	45.0% (9)	15.0% (3)	15.0% (3)	20
Communicate effectively with a range of audiences?	15.8% (3)	68.4% (13)	10.5% (2)	5.3% (1)	19
Analyze the local and global impact of computing on individuals, organizations and society?	10.0% (2)	70.0% (14)	10.0% (2)	10.0% (2)	20
Engage in continuing professional development?	20.0% (4)	60.0% (12)	15.0% (3)	5.0% (1)	20
Use current techniques, skills and software tools necessary for programming practice?	26.3% (5)	52.6% (10)	15.8% (3)	5.3% (1)	19
Model and design computer-based systems, using trade-offs involved in design choices?	20.0% (4)	60.0% (12)	15.0% (3)	5.0% (1)	20
Apply software engineering principles in the construction of complex software systems?	20.0% (4)	55.0% (11)	10.0% (2)	15.0% (3)	20

Are there any student learning outcomes that should be added or revised?

answered question 20

skipped question 3

9. How would you rate the general quality of instruction in your computer science classes?

		Response Percent	Response Count
Excellent		5.0%	1
Very Good		40.0%	8
Good		20.0%	4
Fair		15.0%	3
Poor		20.0%	4

Comments 7

answered question 20

skipped question 3




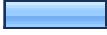
10. How would you rate the helpfulness and accuracy of the advisement you received at CSUN?

		Response Percent	Response Count
Excellent		5.0%	1
Very Good		35.0%	7
Good		35.0%	7
Fair		15.0%	3
Poor		10.0%	2
	Comments)		4
answered question			20
skipped question			3





11. How would you rate the timeliness of the advisement you received at CSUN (e.g., the ability to easily schedule a meeting with an advisor) ?

		Response Percent	Response Count
Excellent		10.0%	2
Very Good		40.0%	8
Good		15.0%	3
Fair		30.0%	6
Poor		5.0%	1
	Comments		2
answered question			20
skipped question			3

12. How do you rate the department's computer labs in terms of their ability to support the computer science curriculum? Consider equipment, software and laboratory availability.

		Response Percent	Response Count
Excellent		20.0%	4
Very Good		30.0%	6
Good		35.0%	7
Fair		15.0%	3
Poor		0.0%	0
Comments			3
answered question			20
skipped question			3

13. Please rate the extent to which the computer science program is meeting your needs and expectations.

		Response Percent	Response Count
Extremely Well		0.0%	0
Very Well		45.0%	9
Satisfactorily		40.0%	8
Not Very Well		10.0%	2
Poorly		5.0%	1
Describe any needs or expectations that are not being met.			3
answered question			20
skipped question			3

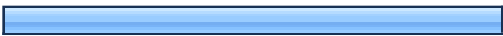




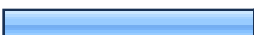
14. What changes, if any, would you like to see in the computer science curriculum?

	Response Count
	9
answered question	9
skipped question	14



15. What extracurricular professional development activities have you participated in at CSUN? Check all that apply.

	Response Percent	Response Count
Member of a student professional organization (e.g. student club)	20.0%	3
Officer of a student professional organization	6.7%	1
Attended professional seminars or workshops on or off campus	33.3%	5
Attended Career Center workshops or presentations	20.0%	3
Attended career fairs	33.3%	5
Attended CECS Tech Fest	86.7%	13
Participated in a professionally related competition	0.0%	0
Worked in an internship or paid position (job) in which you used your technical skills	26.7%	4
Participated in the Honor's Coop Program	0.0%	0
Other (please specify)		1
answered question		15





16. What research activities have you participated in at CSUN (both inside and outside of class)

		Response Percent	Response Count
Wrote a research paper for a course in the computer science major		75.0%	12
Did Library or Internet research for a course project or assignment		75.0%	12
Found software tools needed for a project		75.0%	12
Learned how to use or install new software tools not taught in a course		81.3%	13
Participated in a research project with other students		56.3%	9
Participated in a research project with a faculty member		37.5%	6
	Other (please specify)		0
		answered question	16
		skipped question	7


17. Do you have a job?

		Response Percent	Response Count
Yes		63.2%	12
No		36.8%	7
		answered question	19
		skipped question	4






18. If you have a job, how many hours per week do you work during the semester?

		Response Percent	Response Count
1 - 10 hours per week		0.0%	0
11 - 20 hours per week		35.3%	6
21 - 30 hours per week		11.8%	2
More than 30 hours per week		23.5%	4
Do not have a job		29.4%	5
answered question			17
skipped question			6






19. Do you plan on getting a job that uses your computer science or technical skills after you graduate?

		Response Percent	Response Count
Yes		100.0%	19
No		0.0%	0
Comments			3
answered question			19
skipped question			4

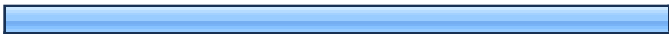
20. Do you plan on getting a Master's Degree at some time in the future?

		Response Percent	Response Count
Yes		42.1%	8
Maybe		21.1%	4
Probably Not		10.5%	2
No		15.8%	3
Don't Know		10.5%	2
	If so, in what field?		7
answered question			19
skipped question			4



21. Do you plan on getting a Ph.D. (or other degree beyond a Master's degree) in the future?

		Response Percent	Response Count
Yes		10.5%	2
Maybe		26.3%	5
Probably Not		26.3%	5
No		26.3%	5
Don't Know		10.5%	2
	If so, in what field?		3
answered question			19
skipped question			4


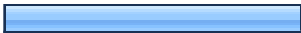


22. What is your gender?

		Response Percent	Response Count
Male		100.0%	19
Female		0.0%	0
		answered question	19
		skipped question	4

23. How old are you?

		Response Percent	Response Count
Under 21 years old		0.0%	0
21 - 25 years old		84.2%	16
26 - 30 years old		15.8%	3
31 - 35 years old		0.0%	0
36 - 40 years old		0.0%	0
Over 40 years old		0.0%	0
		answered question	19
		skipped question	4

24. What is your racial or ethnic background? Mark all that apply.

		Response Percent	Response Count
Black or African-American		0.0%	0
Hispanic or Latino		11.1%	2
White		44.4%	8
Asian		44.4%	8
Native Hawaiian or Other Pacific Islander		0.0%	0
Native American Indian		5.6%	1
answered question			18
skipped question			5