Fall 2013 Survey of Local Computer Science Graduate Programs

The Computer Science Department at San Jose State University has instituted a biennial survey of local computer science graduate programs in an effort to determine if our BS Computer Science (BSCS) graduates are adequately prepared for graduate study. While most of our BSCS graduates enter the Silicon Valley workforce as software developers, we estimate that 20% of them eventually enter local M.S. or Ph.D. programs in computer science.

Approximately how many students were admitted into your program in the past five years who received a BSCS degree from San Jose State?

- *More than 10*
- *5 to 10*
- *Less than 5*
- *Don't know*

Program Outcomes

The BSCS program outcomes-attributes graduates should have-- are the standard outcomes required by ABET. If you are familiar with our graduates, how would you compare them on average to other students for each of these attributes?

	Above Average	*Average*	*Below Average*
(a) An ability to apply knowledge of computing and mathematics to solve problems			
(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution			
(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs			
(d) An ability to function effectively on teams to accomplish a common goal			
(e) An understanding of professional, ethical, legal, security and social issues and responsibilities			
(f) An ability to communicate effectively with a range of audiences			
(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society			
(h) Recognition of the need for and an ability to engage in continuing professional development			
(i) An ability to use current techniques, skills, and tools necessary for computing practice			
(j) An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices			
(k) An ability to apply design and development principles in the construction of software systems of varying complexity			

Which of the above outcomes are most important for success in your program?

What additional outcomes would you like to see on this list?

Program Objectives

While the program outcomes listed previously are attributes graduates should have upon completion of the BSCS program, the program objectives listed below are additional attributes they should have three to five years after graduation:
(l) Be making progress in their chosen career or advanced educational program.
(m) Be contributing to their chosen profession.
(n) Be growing in their professional abilities through self-study and course work.

List any additional objectives that should be on this list. (e.g., business experience, entrepreneurship, community service, travel, soft skills, etc.)

Progress toward degree

Objective (I) deals with career and academic progress. On average, how would you compare the rate of progress through your program of our BSCS graduates to other students?

- *Higher*
- *Same*
- *Lower*
- *Don't Know*

Professional activities

Objective (m) deals with involvement in professional activities. How important are the following professional activities for success in your program.

	Very important	*Important*	*Somewhat important*	*Not important*
Membership in a professional society such as IEEE or ACM				
Attending conferences and professional meetings				
Volunteering to work at conferences and professional meetings				
Publishing papers in journals and trade publications				

What other professional activities would be important for success in your program?

Acquiring new skills

Objective (n) deals with the ability to acquire new skills as the need arises. How important are the following skill acquisition attributes for success in your program.

	Very important	*Important*	*Somewhat important*	*Not important*
The ability to quickly learn a new programming language.				
The ability to learn how to install, configure, and maintain software and hardware systems				
The ability to quickly master new tools				

What other types of skills should students in your program be expected to acquire on their own?

Program Curriculum

By CSU mandate, the BSCS program is 120 units. This includes 49 units of computer science, 51 units of general education and 35 units of math and science courses. (Some courses double count.)

Core courses

In addition to several electives and a course on computer ethics, our BSCS students are required to take the core CS courses listed below (upper division courses are numbered between 100 and 200, catalog descriptions can be found at http://info.sjsu.edu/web-dbgen/catalog/departments/CS-courses.html). How important is each one for success in your program?

	Very important	*Important*	*Somewhat important*	*Not important*
CS 46A... Intro to Programming in Java				
CS 46B....Intro to Data Structures in Java				
CS 47.....Intro to Computer Systems (Assembly)				
CS 49C....Programming in C				
CS 100W...Technical Writing				
CS 146....Data Structures & Algorithms				
CS 147....Computer Architecture				
CS 149....Operating Systems				
CS 151....Object-Oriented Design				
CS 152....Programming Paradigms				
CS 154....Formal Languages & Computability				
CS 160....Software Engineering				

If you consider CS 154 to be important, would an advanced course in algorithm analysis (our CS 155) be an acceptable alternative?

- *Yes*
- *No*
- *Don't know*

For success in your program, what additional CS courses would you like students to have taken?

Math and physics background

Our BSCS students are required to take the math and science courses listed below. How important is each one for success in your program?

	Very important	*Important*	*Somewhat important*	*Not important*
Physics 50.....Mechanics				
Physics 51.....Electro-magnetism				
Math 30.....Differential Calculus				
Math 31.....Integral Calculus				
Math 42.....Discrete Math				
Math 129A.....Linear Algebra				

For success in your program, what additional supporting courses would you like students to have taken?

Other Comments

Please use the space below to provide any additional comments or advice. Thank you.