**The Spring 2012**

**Computer Science Department - Employer Survey**

Prepared by Office of Institutional Research – May 2012

The purpose of this survey was to help in the accreditation of the Department of Computer (DCS), San Jose State University. Employers provided their opinions on DCS alumni about their contributions to their profession, and their abilities and skills in the workplace. The feedback will be used to review and assess DCS and to develop and improve the department objectives.

This online survey was developed and conducted by the Department Chair and the faculty of DCS, in consultation with the Office of Institutional Research. In the May of 2012, surveys were sent to 101 individuals, and a total of 20 responses were received. This is a 20% response rate.

The results of the survey are summarized below. If you have any questions or need additional information, please contact Dr. John Briggs, the Office of Institutional Research at (408) 924-1520.

**Highlights/Selected findings:**

* 78% (14 out of 18) said that compared to others, DCS grads advance at the same pace or faster in their careers (Q1).
* 70% (14 out of 20) said that compared to others, DCS grads acquire new skills at the same pace or faster (Q3).

comparing DCS grads with others:

* 90% (17 out of 19) said that DCS grads have an average or above average ability to apply knowledge of computing and mathematics to solve problems (Q4a).
* 83% (15 out of 18) said that DCS grads have an average or above average ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs (Q4c).
* 72% (13 out of 18) said that DCS grads have an average or above average ability to communicate effectively with a range of audiences (Q4f).
* 83% (15 out of 18) said that DCS grads have an average or above average understanding of the need for and an ability to engage in continuing professional development (Q4h).
* 59% (10 out of 17) said that DCS grads have an average or above average 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 (Q4j)

**Frequency Distribution**

**How many SJSU CS grads have you worked with or supervised?**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | 1 | 8 | 40.0 | 40.0 | 40.0 |
| 2 | 3 | 15.0 | 15.0 | 55.0 |
| 3 | 3 | 15.0 | 15.0 | 70.0 |
| 4 | 2 | 10.0 | 10.0 | 80.0 |
| 5 or more | 4 | 20.0 | 20.0 | 100.0 |
| Total | 20 | 100.0 | 100.0 |  |

**1. Compared to others, the speed SJSU CS grads advance in their careers is:**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Faster | 2 | 10.0 | 11.1 | 11.1 |
| About the same | 12 | 60.0 | 66.7 | 77.8 |
| Slower | 4 | 20.0 | 22.2 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**2. Compared to others, the number of professional contributions made by SJSU CS grads is:**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | More | 2 | 10.0 | 13.3 | 13.3 |
| About the same | 6 | 30.0 | 40.0 | 53.3 |
| Fewer | 7 | 35.0 | 46.7 | 100.0 |
| Total | 15 | 75.0 | 100.0 |  |
| Missing | System | 5 | 25.0 |  |  |
| Total | 20 | 100.0 |  |  |

**3. Compared to others, the rate SJSU CS grads acquire new skill is:**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Faster | 3 | 15.0 | 15.0 | 15.0 |
| About the same | 11 | 55.0 | 55.0 | 70.0 |
| Slower | 6 | 30.0 | 30.0 | 100.0 |
| Total | 20 | 100.0 | 100.0 |  |

comparing DCS grads with others:

**4a. Ability to apply knowledge of computing and mathematics to solve problems**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 5 | 25.0 | 26.3 | 26.3 |
| Average | 12 | 60.0 | 63.2 | 89.5 |
| Below Average | 2 | 10.0 | 10.5 | 100.0 |
| Total | 19 | 95.0 | 100.0 |  |
| Missing | System | 1 | 5.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4b. Ability to analyze a problem, and identify and define the computing requirements appropriate to its solution**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 4 | 20.0 | 22.2 | 22.2 |
| Average | 11 | 55.0 | 61.1 | 83.3 |
| Below Average | 3 | 15.0 | 16.7 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4c. Ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 6 | 30.0 | 33.3 | 33.3 |
| Average | 9 | 45.0 | 50.0 | 83.3 |
| Below Average | 3 | 15.0 | 16.7 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4d. Ability to function effectively on teams to accomplish a common goal**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 9 | 45.0 | 47.4 | 47.4 |
| Average | 8 | 40.0 | 42.1 | 89.5 |
| Below Average | 2 | 10.0 | 10.5 | 100.0 |
| Total | 19 | 95.0 | 100.0 |  |
| Missing | System | 1 | 5.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4e. Understanding of professional, ethical, legal, security and social issues and responsibilities**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 6 | 30.0 | 35.3 | 35.3 |
| Average | 8 | 40.0 | 47.1 | 82.4 |
| Below Average | 3 | 15.0 | 17.6 | 100.0 |
| Total | 17 | 85.0 | 100.0 |  |
| Missing | System | 3 | 15.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4f. Ability to communicate effectively with a range of audiences**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 4 | 20.0 | 22.2 | 22.2 |
| Average | 9 | 45.0 | 50.0 | 72.2 |
| Below Average | 5 | 25.0 | 27.8 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4g. Ability to analyze the local and global impact of computing on individuals, organizations, and society**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 3 | 15.0 | 16.7 | 16.7 |
| Average | 9 | 45.0 | 50.0 | 66.7 |
| Below Average | 6 | 30.0 | 33.3 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4h. Recognition of the need for and an ability to engage in continuing professional development**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 4 | 20.0 | 22.2 | 22.2 |
| Average | 11 | 55.0 | 61.1 | 83.3 |
| Below Average | 3 | 15.0 | 16.7 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4i. Ability to use current techniques, skills, and tools necessary for computing practice**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 5 | 25.0 | 26.3 | 26.3 |
| Average | 12 | 60.0 | 63.2 | 89.5 |
| Below Average | 2 | 10.0 | 10.5 | 100.0 |
| Total | 19 | 95.0 | 100.0 |  |
| Missing | System | 1 | 5.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4j. 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**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 3 | 15.0 | 17.6 | 17.6 |
| Average | 7 | 35.0 | 41.2 | 58.8 |
| Below Average | 7 | 35.0 | 41.2 | 100.0 |
| Total | 17 | 85.0 | 100.0 |  |
| Missing | System | 3 | 15.0 |  |  |
| Total | 20 | 100.0 |  |  |

**4k, Ability to apply design and development principles in the construction of software systems of varying complexity**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| --- | --- | --- | --- | --- |
| Valid | Above Average | 3 | 15.0 | 16.7 | 16.7 |
| Average | 10 | 50.0 | 55.6 | 72.2 |
| Below Average | 5 | 25.0 | 27.8 | 100.0 |
| Total | 18 | 90.0 | 100.0 |  |
| Missing | System | 2 | 10.0 |  |  |
| Total | 20 | 100.0 |  |  |

**Descriptive Statistics**

|  | N | Mean | Std. Deviation |
| --- | --- | --- | --- |
| 1. Compared to others, the speed SJSU CS grads advance in their careers is | 18 | 1.89 | .583 |
| 3. Compared to others, the rate SJSU CS grads acquire new skills is | 20 | 1.85 | .671 |

Rating Scale 1 = Slower; 2 = About the same; 3 = Faster

|  | N | Mean | Std. Deviation |
| --- | --- | --- | --- |
| 2. Compared to others, the number of professional contributions made by SJSU CS grads is | 15 | 1.67 | .724 |

Rating Scale 1 = Fewer; 2 = About the same; 3 = More

comparing DCS grads with others:

|  | N | Mean | Std. Deviation |
| --- | --- | --- | --- |
| 4a. Ability to apply knowledge of computing and mathematics to solve problems | 19 | 2.16 | .602 |
| 4b. Ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | 18 | 2.06 | .639 |
| 4c. Ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs | 18 | 2.17 | .707 |
| 4d. Ability to function effectively on teams to accomplish a common goal | 19 | 2.37 | .684 |
| 4e. Understanding of professional, ethical, legal, security and social issues and responsibilities | 17 | 2.18 | .728 |
| 4f. Ability to communicate effectively with a range of audiences | 18 | 1.94 | .725 |
| 4g. Ability to analyze the local and global impact of computing on individuals, organizations, and society | 18 | 1.83 | .707 |
| 4h. Recognition of the need for and an ability to engage in continuing professional development | 18 | 2.06 | .639 |
| 4i. Ability to use current techniques, skills, and tools necessary for computing practice | 19 | 2.16 | .602 |
| 4j. 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 | 17 | 1.76 | .752 |
| 4k. Ability to apply design and development principles in the construction of software systems of varying complexity | 18 | 1.89 | .676 |

Rating Scale 1 = Below Average; 2 = Average; 3 = Above Average

**WRITTEN COMMENTS**

**5. What other qualities should SJSU CS graduates have besides those already mentioned?**

* Integrity , good communication
* They are motivated but seems to lack the leadership and think outside of the box
* Better ability to speak English.
* Graduates should try to do internships over the summer to further gain professional experience.
* Stronger grounding in computing vocabulary and cross-functional team skills.
* More hands on experience with their projects, and exposure to Unix, Linux platforms as well. Good trouble shooting and problem solving skills would help
* N/A

**6. Any additional comments?**

* Different outcomes among the four I have supervised. 1 doing quite well and advancing 2 meeting expectations, not outstanding 1 let go for not meeting expectations
* Following qualities we look for in SJSU CS graduates which make them Professional: 1) Must be self motivated 2) Must be striving to learn new things and Technology 3) Must be honest about their work and schedule 4) Must understand work deadlines and deliver before the deadlines 5) Must not be doing their college work/homework during working hours I did not find any of above qualities inside SJSU CS graduates i worked/working with. Anand
* N/A