The Computer Engineering is one of the largest departments in the College of Engineering at San Jose State University and one of the leading suppliers of engineers to Silicon Valley. The department supports the following programs:

- Computer Engineering
- B.S. Computer Engineering
- M.S. Computer Engineering
- Software Engineering
- B.S. Software Engineering
- M.S. Software Engineering

The Computer Engineering and Computer Science Departments are jointly offering the BS degree program in Software Engineering.

In the Masters of Software Engineering, three specializations are provided that lead to a Masters of Science in Software engineering degree: Enterprise Software Technologies, Software Systems Engineering, and Networking Software.

Another successful program is offering “on-site” graduate courses on the premise of some of the major local companies (i.e. IBM, Cisco). Also a number of certificates are being offered.

The department attracts a large number of part-time students as well as a large number of international students. The department employs 16 tenure-track faculty members in addition to 16 adjunct faculty members. Also the department is staffed by two administrative support personnel and one technical support person.

**Curriculum:**

The department is successful in offering:

- Broad range of degree programs and courses
- Special program at industry sites
- Dedicated full time faculty
- Strong industry partnership
- Internship opportunities with major leading companies

Courses are generally being updated and new course are being offered to achieve the department stated objective and meet students needs. Furthermore, the department has established a well
defined process for introducing new courses. However more faculty cooperation and coordination would be very helpful to avoid any course overlaps.

It is my understanding that a large number of courses are listed. However, a number of these courses are not offered often - may be once every two years. Furthermore, some of these courses have not been offered for a long time.

Assessment:

The department has developed a comprehensive assessment plan. Assessment is the primary means by which thoughtful, constructive changes and improvements to existing programs can be made with some confidence that these changes will result in improvements in the stated program objectives.

In the pursuit of any program improvement, it is vitally important that students to be made aware of program objectives and receive feedback on their own progress relative to such objectives. Additionally, it is important for faculty to be aware of student achievement and the extent to which their efforts are contributing to that achievement.

My recommendation is that more faculty involvement in assessment is needed and a holistic view would prove beneficial.

Laboratories:

The department has been successful in securing equipment from leading industry to equip the laboratory facilities. The laboratory facility seems adequate but the network laboratories needs upgrading and more support to meet the needs of this fast changing and growing area. Quality maintenance and laboratory support are also essential in the success and advancement of these programs.

Advising

Proper and timely advising has been shown to significantly improve students’ success and graduation rate. The department has a successful advising program in place and has a well defined process for students to seek help and support through their academic studies. Transfer student always require special attention. One observation is to enhance the advising for transfer students in terms of program requirement and course substations. More defined coordination with the local community colleges would be very useful.
Student’s Retention:

Student’s retention is a challenging problem for many institutions and requires a great deal of study and investigation. Low student’s retention might be due to a variety of reasons, some of which may include:

- Not offering attractive and relevant programs
- Student’s lack of interest in specific program or area
- Large classes
- Lack of mentorship

One approach that might prove helpful is to incorporate problem-based learning and extensive mentoring practices. This interdisciplinary research approach has many benefits for students including learning to work in groups, learning the research process, and meeting a diverse set of mentors.

An integrative approach to problem solving is thought to more strongly attract and engage students from all demographic groups. Research indicates that women and minorities are more likely to continue in a scientific discipline if they are able to engage with problems that have a viable connection to society. Class project and research projects should be, whenever possible, connected to pressing scientific problems that span disciplines and impact society. This will allow students to connect early to their program of study.

With that many programs, courses, and special programs and only 16 full-time faculty, it might be very challenging to provide quality advising, teaching, and participate in regular assessment activities. This will impact a number of issues and contribute more to student needing more than four years to graduate.

B.S. in software engineering is an excellent idea and a much needed focus. However, being offered under the umbrella of two programs might not be the best way to present to students. One department need to champion this program and gather more support to advance from its infancy level.

Faculty:

The department has 16 tenured dedicated faculties. Adjunct faculties are also a good asset to the department; however, the department needs to hire more faculties to cover courses both in computer engineering and software engineering areas. High number of adjunct faculty might not be viewed favorably by accreditation institutions.

Current faculty teaching load of three courses and some with four courses is considered high. By being in Silicon Valley, the faculty needs to stay competitive and acquire updated knowledge in their current research and teaching area. Furthermore, faculty needs time for professional development and to engage more in research and course development. Provide more support for teaching assistants would allow faculty to devote more time to other areas such as research,
research training, and advising. Large classes might be a contributor to student’s low rate and might impact the quality of instructions.