

**Department of Computer Science  
Report of Use of Assessment Results  
For Academic Year 2000-2001**

**Goals and Outcomes:**

*Goal 1: To provide students with a broad understanding of computer science, as recommended in nationally accepted program guidelines.*

- A. Expected Outcome: *Computer Science seniors will compare favorably to graduates to other Computer Science programs, nationwide.*

Assessment: *SLU graduating computer science majors will take the ETS Major Field Assessment Test in Computer Science and will achieve an average score above the 50<sup>th</sup> percentile on a national sample of schools in the areas of Programming Methodology and Software Systems.*

Scores (expressed as percentile rankings) from the MFAT were as follows:

Area	Fall, 2000 graduates	Spring, 2001 Graduates
Programming Methodology	50.0	47.9
Software Systems	28.6	38.3

*Goal 2: Computer Science majors will understand software development principles and will be able to successfully apply them.*

- A. Expected Outcome: *Computer Science students in CMPS 411, Software Engineering, will have felt adequately prepared to tackle a major software development project.*  
Assessment: *75% of the students will indicate, on the course exit survey, that they felt that their freshman, sophomore and junior-level coursework at least “adequately prepared” them for the project in CMPS 411.*

- B. Expected Outcome: *Computer Science students in CMPS 411, Software Engineering, will successfully complete a major software development project.*  
Assessment: *75% of the students will earn a grade of “B” or better on the project.*

68% of the CMPS 411 students indicated that their previous course work adequately prepared them for the capstone course. 88.9% scored a B or better on their projects.

*Goal 3: Computer Science graduates will feel adequately prepared for computing careers or for graduate studies in computer science.*

- A. Expected Outcome: *Computer Science graduates will feel adequately prepared for a career in computing or for graduate studies in computer science or both.*

*Assessment: In the "Survey of Undergraduate Alumni", 75% of computer science graduates will be Satisfied or Very Satisfied with the "Overall Quality of Your Degree Program".*

*B. Expected Outcome: Computer Science graduates will feel that their course work related directly to their jobs or their graduate studies or both.*

*Assessment: In the "Survey of Undergraduate Alumni", 75% of computer science graduates will respond, for 75% of the courses listed, that the concepts they learned in those courses were of "Some Help" or "Lots of Help".*

In the 1999 Survey of Undergraduate Alumni, 62.5% of the respondents indicated that they were Satisfied or Very Satisfied with the overall quality of the program.

Also, the respondents indicated that the concepts in 65% of the courses listed were helpful.

### **Discussion:**

Goal 1: The Fall, 2000, graduates scored right at our goal in the Programming Methodology area, but the scores for the Spring, 2001 graduates were about 5% lower. In Software Systems, the Fall, 2000, graduates scored "Much Less Than Expected", but the scores for the Spring, 2001, graduates, although still "Less Than Expected", rose significantly.

Before taking action, we are going to compare the topics that we cover in our major courses to the Content Specification for the MFAT in Computer Science. After identifying areas that we do not cover in depth, we will determine, based on the goals for our program, if course content or degree of coverage should be adjusted, or if a change in the assessment for this goal is warranted. In making our determination, we will consider the recommendations in *Computing Curricula 2001* (national recommendations for undergraduate curricula in Computer Science) and the requirements for ABET/CAC accreditation.

Goal 2: In the course exit survey, in addition to asking the students to what degree they felt prepared, we asked "In what areas did you feel that you were less than adequately prepared?" Most responded that they had not been taught the particular programming language in which their projects were written. However, when asked, "In what areas did you feel adequately prepared?" many responded that they had sufficient knowledge of programming language concepts that it was easy for them to learn a new language. So, we feel that we've done our jobs if the students can easily learn a new language, and that there is no reason to change what we're doing.

The second-most mentioned area of unpreparedness was database concepts. Since students in the scientific option are not required to take the database course, we may advise those students to take the database course as one of their 400-level electives.

CMPS 383 was cited by over half of the students as more than adequately preparing them for the teamwork aspects of 411. Again, since the scientific-option students are not required to take 383, we need to determine a way for them to gain equivalent team building experience.

In summary, many students did not have the specific knowledge needed for CMPS 411, but by building on concepts from their earlier classes, they were able to learn, on their own, what they needed to successfully complete their projects. So, we feel that we have succeeded in providing them the foundations for life-long learning in computer science, and that no significant curriculum changes are necessary.

Goal 3: In the 1999 survey of alumni, the respondents were most dissatisfied with departmental lab facilities. However, in the last year, we have upgraded all of the lab equipment and moved into a new facility. We have also, in the last two years, made significant changes to the curriculum. We feel that those improvements would make up the 13% difference in the satisfaction rate.

Alumni also recommended that we teach specific software applications in the curriculum. But, because of the a wide variety in use by industry, we, again, feel that by presenting the general concepts applicable to all application packages, we are preparing the students to learn to use whatever packages they may encounter in their jobs and graduate schools.

**Actions to be Taken:**

- (1) Determine why SLU computer science graduates are not performing as well as their peers from other institutions on the Major Field Achievement Test in Computer Science.
- (2) In the short-term, advise CS majors in the scientific emphasis to take CMPS 383, for team-building, and CMPS 431, for database concepts, as their upper-level electives. Determine what, if anything, should be done in the long term.