



2008-2009 Assessment Plan Report

PROGRAM ASSESSMENT REPORT AY 2008-2009

Report Date: June 29, 2009

School/College: College of Arts and Sciences

Department/Program: Master of Science in Computer Science
Master of Science in Internet Engineering

Person completing the Report: Gregory D. Benson

1. **Overview Statement:** Briefly summarize the assessment activities that were undertaken this academic year, indicating:
 - a. which program learning outcomes were assessed this year.
 - b. who in your department/program was involved in the assessment of the above learning outcomes

The AY 2008-2009 assessment activities as outlined in our original assessment plans are the same for the Master of Science in Computer Science (MSCS) and the Master of Science in Internet Engineering (MSIE). Therefore, we are provided one consolidated report for these programs. In future years, the assessment activities will be different for these two programs.

We provide our learning outcomes statements for both the Master of Science in Computer Science (MSCS) and the Master of Science in Internet Engineering (MSIE). Note that beginning in AY 2009-2010, the MSIE program name will be changed to Master of Science in Web Science (MSWS).

Students who complete the Master of Science in Computer Science will:

1. Be able to describe and effectively apply modern software engineering principles on actual projects.
2. Be able to design, prototype, implement and debug large-scale software projects, including developing and maintaining project timelines and meeting deadlines.
3. Be able to effectively evaluate relevant literature in determining solutions and approaches



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for software development.

4. Be able to explain developed solutions in both written and oral form.
5. Be able to work effectively as a team and exhibit satisfactory group participation skills.

Students who complete the Master of Science in Internet Engineering will:

1. Be able to describe and effectively apply modern software engineering principles on actual projects.
2. Be able to design, prototype, implement and debug large-scale software projects, including developing and maintaining project timelines and meeting deadlines.
3. Be able to implement and apply modern AI techniques.
4. Be able to describe and implement algorithms used in modern distributed and web-based systems.
5. Be able to explain developed solutions in both written and oral form.
6. Be able to work effectively as a team and exhibit satisfactory group participation skills.

For this assessment report we are assessing student performance in Outcomes 1 and 2 from both the MSCS and MSIE programs.

Christopher Brooks and Greg Benson carried out all of the assessment activities for the 2008-2009 year. However, other CS faculty were consulted regarding the approach and initial goals.



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2. Please Answer the Following Questions for Each of the Student Outcomes Assessed:

a. What did you do?

Describe clearly and concisely how you assessed the learning outcomes that were evaluated this year (e.g., measures, research methods, etc.). [please use bullet points to answer this question]

Based on our original assessment plan for the MSCS and MSIE programs, we gathered data on the culminating project, Webmail, for CS 601, with the intent of determining whether students have mastered Outcome 1: Be able to describe and effectively apply modern software engineering principles on actual projects, and Outcome 2: Be able to design, prototype, implement and debug large-scale software projects, including developing and maintaining project timelines and meeting deadlines.

We should note that this is the first year of our assessment, and so this data is preliminary. CS601 is typically taken in the first semester of a graduate student's career. In year 2, we plan to collect data on the same students' performance in CS690, taken at the end of their degree program. This will allow us to measure student progress throughout the program, as opposed to within one course.



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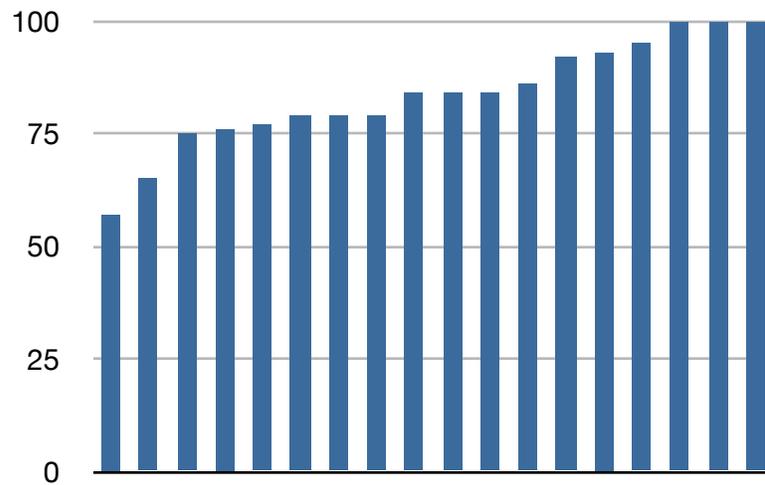
The data for 601 student performance on Webmail is summarized below:

mean: 83.6

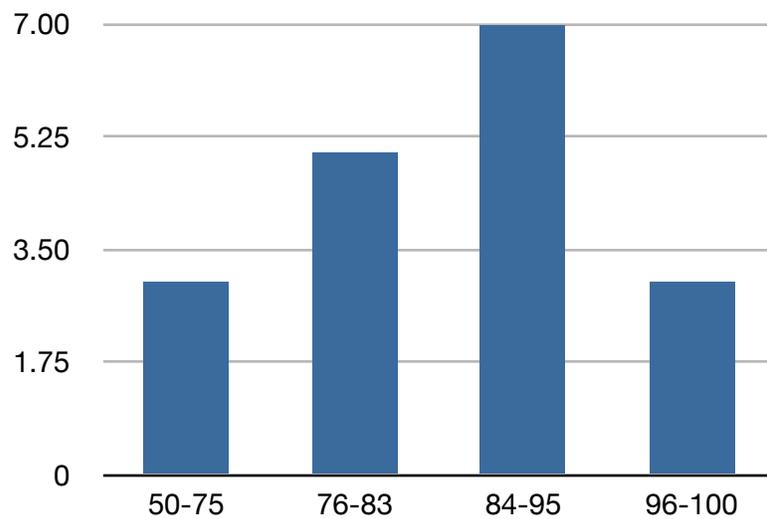
median: 84

standard deviation: 11.86

Grades for CS 601 Webmail Project



Number of Students Receiving a Given Webmail Grade





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b. What did the faculty in the department or program learn?

Summarize your findings and conclusions as a result of the assessment indicating strengths and weaknesses in student learning demonstrated by this assessment.

There are at least two conclusions to be drawn from this data.

First, we see that the majority of students in 601 are showing adequate mastery of software engineering concepts, as shown by their performance at B level or above. In addition, a large fraction of the class is performing at above 90 percent, which we would consider to be the cutoff for an A-, or superior performance.

Second, there is a small number of students (5 in this data set) who demonstrate poor performance. This is an indicator that they have not yet mastered these concepts, and may need to retake CS601 or a remedial class. We will need to keep an eye on these students as they progress in their graduate career.

It is too early to draw causal conclusions from this data, such as whether performance is due to student or curricular factors. Additional data collected in future years will help to answer this.

c. What will be done differently as a result of what was learned?

Discuss how courses and/or curricula will be changed to improve student learning as a result of the assessment. Include a discussion of how the faculty will help students overcome their weaknesses and improve their strengths.

At this point we still need to collect more data before drawing conclusions and make changes. However, we recently completely revised the MSCS and MSIE (MSWS) programs, so we will need to rewrite our assessment plans in light of the changes starting in AY 2009-2010. In particular we will no longer be offering CS 601, which was a key course and indicator in our original plans.



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3. **Attach a copy of the components of the department/program assessment plan that have been modified since its initial submission:**
 - a. Program Mission
 - b. Program Learning Goals
 - c. Program Learning Outcomes
 - d. Program Learning Rubrics aligned with outcomes
 - e. Curriculum map that shows the courses that pertain to the outcome

Please return to: Provost Office by June 1, 2009

You can send your replies as either a Word attachment (to: marin@usfca.edu) or as a hard copy to: Provost Office, Lone Mountain Rossi Wing 4th floor.

If you have any questions, please contact: William Murry, Director of Institutional Assessment (wmurry@usfca.edu or x5486).