1. What courses/certificates/programs have you assessed this past semester?

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<tr>
<th>Course</th>
<th>#SLOs</th>
<th>Assessed</th>
<th>SLO1</th>
<th>SLO2</th>
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Note: As part of the PLO assessment, 7 sections of Math 125, 10 sections of Math 227, and the only section of Math 266 participated in the Math Program Effectiveness survey. The overall survey report is attached separately.

2. Summarize the analysis of your assessment results for courses in your area.

**SLO Assessment Analysis**

Math 105

SLO 1
57% of the 129 students who took the final exam earned at least 3 points out of 5 points, which is below the expected goal (70%) of the math department. However, this was an improvement over our last round of assessments which had only 36% scoring 3 points or better out of 5 points.

**SLO 2**

66% of the students earned at least 3 points out of 5 points. This was a setback on the previous result of 83% earning 3 points out of 5 points. 5% of the students earned 0 points out of 5 on this very easy problem, where the first question asks students to identify a given shape as a rectangle.

**Math 112**

**SLO 1**

51% of the students earned at least 3 points out of 5 points which was below the expected goal (70%) of the math department.

**SLO 2**

55% of the students earned at least 3 points out of 5 points which was below the expected goal (70%) of the math department.

**Math 123A**

**SLO 1**

51% of the students earned at least 3 points out of 5 points which was below the expected goal (70%) of the math department. Based on the results shown, students seem to either know how to graph a linear equation or not.

**SLO 2**

65% of the students earned at least 3 points out of 5 points which was slightly below the expected goal (70%) of the math department, but it was an improvement on the last cycle report results of 63% for a similar question.

**Math 123B**

**SLO 1**

80% of the students earned at least 3 points out of 5 points which is above the expected goal (70%) of the math department. Based on the results shown, most of the students demonstrated a satisfactory understanding of how to factor and simplify algebraic expressions.
Compared to the previous assessment, the current assessment on the same SLO topic shows a 3% improvement in students’ understanding.

**SLO 2**

62% of the students earned at least 3 points out of 5 points which is below the expected goal (70%) of the math department.

Based on the results shown, many students had difficulties in solving radical equations.

Compared to the previous assessment, the current assessment on the same SLO topic shows a 7% improvement in students’ understanding.

The result indicates that the implementation of the Fall 11 recommendation, “add additional review problems related to SLO topics,” has helped to improve students’ understanding on the SLO 2.

**Math 123C**

**SLO 1**

50% of the students earned at least 3 points out of 5 points which is below the expected goal of (70%) set by the math department.

Based on the results shown, half of the students do not seem to understand absolute value inequalities adequately. The percentage of students who earned at least 3 points in Spring 2012 is significantly lower than the percentage of students who earned at least 3 points in Fall 2011, which was 77% and above the expected goal.

While the results do not necessarily mean poor student performance in the class, they tend to indicate that in general students are having difficulties in problems related to solving absolute value inequalities. This trend seems to be increasing between semesters (27% more than the Fall 2011 semester). Add to that a large percentage of students getting zero on this question (20.4%), suggesting that many of these students may have provided blank answers. While lack of knowledge is a definite cause for not answering a question, other possibilities include lack of time and student concentration on other (non-SLO) questions of the final exam. A study to confirm or reject these later possibilities requires data on final exam scores which were not available to me at the time of the analysis.

**SLO 2**

76% of the students earned at least 3 points out of 5 points which is above the expected goal (70%) of the math department.

Based on the results shown, many students seem to understand graphing using transformation moderately. The percentage of students who earned at least 3 points in Spring 2012 is significantly greater than the percentage of students who earned at least 3 points in Fall 2011, which was 37%. It is more than double the percentage.
recommended, instructors have covered the topic of graphing using transformation more thoroughly than the previous semester.

Math 125

SLO 1

48% of the students earned at least 3 points out of 5 points which is below the goal of (70%) set by the math department. The percentage of students who earned at least 3 points in Spring 2012 is significantly lower than the percentage of students who earned at least 3 points in Fall 2011, which was 60%. When broken down between full-time and adjunct faculty about 55% of the students enrolled with full-time instructors got 3 points or better compared to only 44% of the students enrolled with adjunct instructors getting 3 points or better.

Based on the results shown, a large percentage of students (45% for full-timers and 56% for part-timers) do not adequately understand the concept of graphing using transformation. In fact, a large percentage of students (20.6% for full-timers and 28.6% for part-timers) received a zero on the SLO1 question. This tends to indicate that students find the topic to be difficult and/or the instructors are not spending enough time covering the section.

While the results do not necessarily mean poor student performance in the class, they tend to indicate that in general students are having difficulties in problems related to Graphing using Transformation. This trend seems to be increasing between semesters (12% more than the Fall 2011 semester) and to be of higher degree in classes taught by adjunct faculty (11% more than those taught by full-timers). Add to that a large percentage of students getting zero on this question, suggesting that many of these students may have provided blank answers. While lack of knowledge is a definite cause for not answering a question, other possibilities include lack of time and student concentration on other (non-SLO) questions of the final exam. A study to confirm or reject these later possibilities requires data on final exam scores which were not available to me at the time of the analysis.

SLO 2

42% of the students earned at least 3 points out of 5 points which is below the goal of (70%) set by the department. The percentage of students who earned at least 3 points in Spring 2012 is significantly lower than the percentage of students who earned at least 3 points in Fall 2011, which was 54%.

Based on the results shown, the majority of the students (58%) do not adequately understand the concept of Interpreting Functions. 39.8% of the students received a zero on the SLO 2. This tends to imply that many of the students do not understand the topic.

While the results do not necessarily mean poor student performance in the class, they tend to indicate that in general students are having difficulties in problems related to Functions and Interpreting Functions. This trend seems to be increasing between semesters (12% more than the Fall 2011 semester). Add to that a large percentage of students (39.8%) getting zero on this question, suggesting that many of these students may have
provided blank answers. While lack of knowledge is a definite cause for not answering a question, other possibilities include lack of time and student concentration on other (non-SLO) questions of the final exam. A study to confirm or reject these later possibilities requires data on final exam scores which were not available to me at the time of the analysis.

**Math 227**

**SLO 1**

For question 1, 48% of the students earned at least 3 points out of 5 points which was below the expected goal (70%) of the math department.

Based on the results shown, only about half of the students demonstrated a satisfactory understanding of how to use probability concepts to solve problems and interpret their results.

Compared to the previous assessment on the same SLO topic, the results show no improvement. In fact, the results indicate a 2% decrease in students' understanding. The reason for the decrease is possibly due to lack of full implementation of the Fall 11 recommendations.

**SLO 2**

For question 2, 44% of the students earned at least 3 points out of 5 points which was below the expected goal (70%) of the math department.

Based on the results shown, most students in general had difficulty in performing a hypothesis testing for a mean. In particular, 24% of the students received 0 point out of 5 points.

Compared to the previous assessment on the same SLO topic, the results show no improvement.

**PLO Assessment Analysis**

**Math 125**

For question 1, 82% (123/150) students earned at least 2 points out of 3 points which was way above the expected goal (70%) of the math department.

Based on the results shown, most of the students in general understand fully how to graph functions using transformations.

For question 2, 49% (74/150) students earned at least 2 points out of 4 points which was below the expected goal (70%) of the math department.
Based on the results shown, many students had difficulties with interpreting the graph of a linear function and the meaning of the slope.

Math 227

62% of the students earned at least 2 points out of 4 points which was below the expected goal (70%) of the math department.

Many students demonstrated a satisfactory understanding of measuring the variation of data given a boxplot. Most students, however, had difficulty in understanding the concepts of probability, confidence interval, and hypothesis testing.

Math 266

Only 18% of the students earned at least 3 points out of 6 points which was well below the expected goal (70%) of the math department.

3. How have the results of your assessments been shared and discussed among the members of your program? (Provide dates and any minutes of meetings.)

The results of SLO and PLO assessments have been posted in the online SLO system.

The results will be, first, discussed among full time faculty in the summer and will then be shared among all faculty on the 2012-2013 FLEX DAY. Further implementations of the recommendations will be discussed in the department meetings.

4. How have the results of your assessments been shared and discussed with members of your advisory committee (if vocational program)?

There are no advisory committees for the Mathematics/CSIT/Engineering Department.

5. Based on the discussion and analysis of your assessment results, what changes have you made or do you plan to make? (Please provide dates, description of changes, and person responsible.).

Based on the assessment results, the math department plans to update the course outlines, create worksheets, post additional learning resources such as instructional videos, practice problems and solutions. In addition, the department plans to use online courseware and Mathematica to help students to visualize and better understand mathematical concepts.
6. What resource requests are planned as a result of the assessments?

None.

7. Have the assessment results been posted on the online system?

Yes.

Written responses to these questions are due by Friday, June 22, 2012. These answers will be important evidence for accreditation.