De Anza College

SLO Assessment Cycle for MATH 1A

Calculus SLO Modified: [04/09/2011]

Harman Dhaliwal's Team Members:

1. Doli Bambhania (x5382) MATH

Additional Team members not on list/notes about team:

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Additional Notes:

Outcomes:

Outcome 1: Statement Modified: []

Analyze and synthesize the concepts of limits, continuity, and differentiation from a graphical, numerical, analytical and verbal approach, using correct notation and mathematical precision.

Assessment Cycle Records:

Outcome 1: Assessment Planning Modified: [06/10/2011]

Assessment Strategy Used:
Quarter: Winter 2011
Assessors: Harman Dhaliwal
Assessment Tools: Exams • Quizzes, Homework

Outcome 1: Reflect & Enhance Modified: [06/10/2011]

Number of people involved in Phase III: 1

Changes:
There were not any significant changes in how we assessed this outcome. As before, the assessment was done through quizzes and exams. However, each quarter, we do update the exam questions. Multiple exam questions for this SLO were constructed. Each question focused on a particular component of the SLO such as computing a limit numerically.

Methods:
For exams, each problem was categorized based on which SLO and respective component the problem assessed. Then a rubric was created to gauge satisfactory student understanding (e.g., if a student earned 3 points out of 4 points for a question showed the student had proper understanding of the SLO component). After the exam was graded, a count was constructed to determine the percentage of students who understood the SLO.

Summary:
Using the rubric, a count was constructed to determine the percentage of students that properly understood the SLO and its components. Post-exam discussions where focused based on the lowest percentages. The discussion gave students a chance to ask further questions and improve their understanding. To assess if the discussion had enhanced understanding, questions were placed on the final exam that tested for the same component of the SLO.

Generally, students were able to understand concepts of limits, continuity, and differentiation from a numerical and graphical perspective but struggled with analytical approach.

Results from the final exam showed improvement in understanding.

Enhancement (Part I):
We plan to refine lecture based on the SLO results of previous exams by allocating more time in lecture, providing students with more practice questions in class, and assigning more homework questions.

Enhancement (Part II):

Outcome 2: Statement Modified: []

Evaluate the behavior of graphs in the context of limits, continuity and differentiability.

Outcome 2: Assessment Planning Modified: [06/10/2011]

Assessment Strategy Used:
Quarter: Winter 2011
Assessors:
Assessment Tools: Exams • quizzes, homework

Outcome 2: Reflect & Enhance Modified: [06/10/2011]

Number of people involved in Phase III: 1

Changes:
There were not any significant changes in how we assessed this outcome. As before, the assessment was done through quizzes and exams. However, each quarter, we do update the exam questions. Multiple exam questions for this SLO were constructed. Each question focused on a particular component of the SLO such as drawing a feasible graph for the derivative of a function given the graph of the function.

Methods:
For exams, each problem was categorized based on which SLO and respective component the problem assessed. Then a rubric was created to gauge satisfactory student understanding (e.g., if a student earned 3 points out of 4 points for a question showed the student had proper understanding of the SLO component). After the exam was graded, a count was constructed to determine the percentage of students who understood the SLO.

Summary:
Using the rubric, a count was constructed to determine the percentage of students that properly understood the SLO and its components. Post-exam discussions where focused based on the lowest percentages. The discussion gave students a chance to ask further questions and improve their understanding. To assess if the discussion had enhanced understanding, questions were placed on the final exam that tested for the same component of the SLO.

Generally, students were able to evaluate the behavior of graphs for limits and continuity but struggled with differentiation.

Results from the final exam showed improvement in understanding.

Enhancement (Part I):
We plan to refine lecture based on the SLO results of previous exams by allocating more time in lecture, using animations to build intuition (such as: http://www.mathdemos.org/mathdemos/derivative_sketch /sketch_the_derivative.html), providing students with more practice questions in class, and assigning more homework questions.

Enhancement (Part II):

Outcome 3: Statement Modified: []

Recognize, diagnose, and decide on the appropriate method for solving applied real world problems in optimization, related rates and numerical approximation.

Outcome 3: Assessment Planning Modified: [06/10/2011]

Assessment Strategy Used:
Quarter: Winter 2011
Assessors:
Assessment Tools: Exams • quizzes, homework

Outcome 3: Reflect & Enhance Modified: [06/10/2011]

Number of people involved in Phase III: 1

Changes:
There were not any significant changes in how we assessed this outcome. As before, the assessment was done through quizzes and exams. However, each quarter, we do update the exam questions. Multiple exam questions for this SLO were constructed. Each question focused on a particular component of the SLO such as computing a limit numerically.

Methods:
For exams, each problem was categorized based on which SLO and respective component the problem assessed. Then a rubric was created to gauge satisfactory student understanding (e.g., if a student earned 3 points out of 4 points for a question showed the student had

proper understanding of the SLO component). After the exam was graded, a count was constructed to determine the percentage of students who understood the SLO.

Summary:
Using the rubric, a count was constructed to determine the percentage of students that properly understood the SLO and its components. Post-exam discussions where focused based on the lowest percentages. The discussion gave students a chance to ask further questions and improve their understanding. To assess if the discussion had enhanced understanding, questions were placed on the final exam that tested for the same component of the SLO.

Generally, students were able to solve numerical approximation and optimization problems but struggled with related rates.

Results from the final exam showed improvement in understanding.

Enhancement (Part I):
We plan to refine lecture based on the SLO results of previous exams by allocating more time in lecture, providing students with more practice questions in class, and assigning more homework questions,

Enhancement (Part II):

[Number of Outcomes for MATH 1A: **3**]