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Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
<p>Start Date: 12/14/2015</p> <p>Course-Level SLO Status: Active</p>		<p>quiz would have carried out a careful analysis with many computations. It also required knowledge of mathematical vocabulary.</p> <p>GE/IL-SLO Reflection: A student who successfully completed this quiz would have carried out a careful analysis with many computations. It also required knowledge of mathematical vocabulary.</p> <p>Related Documents: Math 105 Reflections.pdf</p>	
<p>Department - Mathematics (MATH) - MATH 108 - ACCELERATED ALGEBRA - Concepts and Connections - Students will develop conceptual understanding of four representations of a function: algebraic model, graph, table, verbal description. They will demonstrate and communicate this understanding in a variety of ways, such as: reasoning with definitions and connecting multiple representations. (Created By Department - Mathematics (MATH))</p> <p>Assessment Cycles: End of Academic Year</p> <p>Start Date: 12/14/2015</p> <p>Course-Level SLO Status: Active</p>	<p>Assessment Method: Exam problems.</p> <p>Assessment Method Type: Exam - Course Test/Quiz</p> <p>Target for Success: 100% of students will show satisfactory understanding of relationship between 4 representations. That's not likely to happen, but any other target feels arbitrary.</p>	<p>07/13/2016 - 50% of students who took the final exam earned a passing grade. 50% is also the percentage of students taking the final exam who completed at least 70% of the conceptual problems satisfactorily. See related document for complete reflection.</p> <p>Result: Target Not Met</p> <p>Year This Assessment Occurred: 2015-2016</p> <p>Resource Request: PD: Equity; Assessment-stereotype threat, cultural competency, implicit bias; FTLA</p> <p>GE/IL-SLO Reflection: The conceptual problems required translation, explanation, computation, and critical thinking.</p> <p>Related Documents: Math 108 Reflections.pdf</p>	
<p>Department - Mathematics (MATH) - MATH 12 - CALCULUS FOR BUSINESS & ECONOMICS - Concepts and Connections - Students will develop conceptual understanding of limits, rates of change, and integrals. They will demonstrate and</p>	<p>Assessment Method: Students' performance on select Exam/Quiz problems will be used to assess their conceptual understanding.</p> <p>Assessment Method Type: Exam - Course Test/Quiz</p>	<p>04/28/2016 - There is general agreement among the teachers teaching this class that the primary challenge is too much content in this course. See related document for more.</p> <p>Result: Target Met</p>	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
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students did in the subsequent course in the sequence; in this case, how they did in Math 1B. What the data shows is that student success varies greatly among the instructors. There are no standard exams and the level of what is considered rigorous differs among instructors. It can be difficult to standardize what these levels are.

Result:

Target Met

Year This Assessment Occurred:

2015-2016

Resource Request:

Time built in to the college calendar to meet with colleagues.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
<p>Assessment Cycles: End of Academic Year</p> <p>Start Date: 12/14/2015</p> <p>Course-Level SLO Status: Active</p>		<p>2. A problem asking students to correctly identify the correct integral among 4 choices the correct integral to compute the flux out of a hemisphere in 3-space using spherical coordinate: 80% of students answered the problem correctly.</p> <p>3. A problem asking students to identify the correct multiple integral in rectangular coordinates for computing triple integral for an unspecified function of 3-variables integrated on the 3D solid region corresponding to a solid half-cylinder with its rectangular base in the xy-plane: 74% of students answered the problem correctly.</p> <p>On a Midterm Exam at Week 10, a problem consisted of 7 sub-problems asked students to demonstrate conceptual understanding of a line integral, the Fundamental Theorem for Line Integral, and Green's Theorem given a vector field and two curves in R^2. Result: 80% class performance on average (79% of students scored at least 70% on this problem.)</p> <p>On a Midterm Exam at Week 10, a problem consisted of 4 sub-problems asked students to evaluate a flux integral without using the Divergence Theorem. Result: 74% class performance on average (76% of students scored at least 70% on this problem.)</p> <p>On a Midterm Exam at Week 5, an application problem consisted of 2 sub-problems asked students to estimate a double integral and the average temperature in a room. Result: 92% class performance on average (89% of students scored at least 70%, and 81% of students scored 100% on this problem.)</p> <p>Result: Target Met Year This Assessment Occurred: 2015-2016</p>	<p>this class that are not directly related to Math1D concepts, but affects their performance in Math1D. One is students' clear understanding of multivariable functions from Math1C, and the other one is their general reasoning skills.</p> <p>1. About understanding multivariable functions from Math 1C: functions are composed of analytic, numeric, and graphical interpretations. For example, given an analytic multivariable function that represents a quadric surface, they need to know how the function graph looks like to come up with specific curve, region, surface, and solid accordingly. Perhaps 1D instructors can communicate more clearly with colleagues teaching 1C that this is an issue in 1D.</p> <p>2. About students' general reasoning skills: Students often think the inverse of a true statement is also true. This happens in this class when students determine whether a given vector field is a gradient vector field or a curl vector field using special tests. It might be helpful to provide students review materials from Math1A through Math1C along with useful math facts that are directly used in Math1D, like an basic knowledge of conditional statements</p>

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		<p>Resource Request: Continued support for hiring Staff in the STEM Center capable of answering questions at this level; continued support of Mathematica license, which is used in courses at this level</p> <p>GE/IL-SLO Reflection: The multiple choice questions required students to be able to compute various integrals involving functions of multiple variables. These questions required students to compute and perform analytical thinking.
 The free-response questions required students to communicate and reason with definitions and theorems, compute various integrals and perform critical/analytical thinking.</p>	
<p>Department - Mathematics (MATH) - MATH 217 - INTEGRATED STATISTICS I - Mechanical Fluencies - Students will demonstrate the ability to calculate probabilities, descriptive statistics, and z-scores. (Created By Department - Mathematics (MATH))</p> <p>Assessment Cycles: End of Academic Year</p> <p>Start Date: 12/14/2015</p> <p>Course-Level SLO Status: Active</p>	<p>Assessment Method: Selected problems from the secure common assessment from the Carnegie Foundation for the Advancement of Teaching.</p> <p>Assessment Method Type: Exam - Course Test/Quiz</p> <p>Target for Success: 70% success rate on those problems</p>	<p>04/20/2016 - 70.5% got two questions involving the calculation of z-scores correct.</p> <p>Result: Target Met</p> <p>Year This Assessment Occurred: 2015-2016</p> <p>Resource Request: none</p> <p>GE/IL-SLO Reflection: Our target was met as the two questions on the final exam were about computing z-scores. We were hoping for higher than 70.5% because these two questions are considered some of the easier ones on the final. Lack of attendance on the final review day may have contributed to the lower percentage but lack attendance overall was an issue this year. Also it's possible that there was a lower reading comprehension for some students and they were not able to</p>	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		interpret the language in these two questions.	

Department - Mathematics (MATH) - MATH 22 - DISCRETE MATHEMATICS - Concepts and Connections - Students will develop conceptual understanding of formal logic and various methods of arguments that can be used as the basis of a computer program. They will demonstrate and communicate this understanding by writing proofs involving number theory, set theory, combinatorics, and discrete probability. (Created By Department - Mathematics (MATH))

Assessment Method:
A high level problem requiring a proof,

Assessment Cycles:
End of Academic Year

Start Date:
12/14/2015

Course-Level SLO Status:
Active

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
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and Connections - Students will develop conceptual understanding of the relationship between a linear function and its graph. They will demonstrate and communicate this understanding in a 162 appropriate, such as reasoning with definitions (MA.1)ing concepts, and connecting multiple representations, as appropriate. (Created By Department - Mathematics (MATH))

Assessment Cycles:
End of Academic Year

Start Date:
12/14/2015

Course-Level SLO Status:
Active

Assessment Method Type:
Exam - Course Test/Quiz

Target for Success:
Over 70% of the class scoring at least 70% on the questions

Result:
Target Met

Year This Assessment Occurred:
2015-2016

Resource Request:
Continue funding for embedded tutors and early alert program. Increase number of hours for embedded tutors in the classroom..

GE/IL-SLO Reflection:
The problem given was a problem involving systems of equations. The students had to compute the solution for the system. In addition, the students had to verbally describe what the solution meant in terms of the context of the problem. Lastly, the problem required critical thinking skills since the students had to determine which equation would better serve the needs given in the problem.

04/18/2016 - Ask for additional hours for embedded tutors to assist in the classroom for this course.

Course-Level SLOs

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		<p>at all. Result: Target Not Met Year This Assessment Occurred: 2015-2016 GE/IL-SLO Reflection: This problem requires translation and interpretation, critical thinking, computation, and supports development of global consciousness through an analysis of environmental phenomena. Related Documents: 7 Atmospheric CO2.pdf M44 SLO Reflection 16W.pdf</p>	
<p>Department - Mathematics (MATH) - MATH 48A - PRECALCULUS I - Concepts and Connections - Students will develop conceptual understanding of linear, polynomial, power functions and their inverses. They will demonstrate and communicate this understanding by graphing, analyzing, and transforming these functions and connecting their multiple representations. (Created By Department - Mathematics (MATH)) Assessment Cycles: End of Academic Year Start Date: 12/14/2015 Course-Level SLO Status: Active</p>	<p>Assessment Method: Students were given questions on exams and/or quizzes. The type and number of questions varied by instructor. Assessment Method Type: Exam - Course Test/Quiz Target for Success: The target of success varies with the way the problem was graded. One instructor made a passing grade success and another made the student getting the problem completely correct success.</p>	<p>07/12/2016 - In two classes, 53% and 57% of students got a passing grade on the final exam. In another class, 44% of students got question one completely correct and 24% of students got question two completely correct. Result: Target Not Met Year This Assessment Occurred: 2015-2016 Resource Request: expand embedded tutoring program GE/IL-SLO Reflection: Math 48A is the first class in the PreCalculus series. It is difficult for students to make the transition from Algebra to PreCalculus. Many instructors have noticed that the students in PreCalculus have poor Algebra skills. If the students in Algebra that intend to take PreCalculus can be separated from the student in Algebra that intend to take Statistics or are done with their math education for now, it may be advantageous to combine the topics in Algebra and the beginning of PreCalculus.</p>	<p>07/12/2016 - expand embedded tutoring program</p>

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
<p>Department - Mathematics (MATH) - MATH 48B - PRECALCULUS II - Concepts and Connections - Students will develop conceptual understanding of rational, exponential, logarithmic, absolute value, composite, and piecewise-defined functions. They will demonstrate and communicate this</p>			

Department - Mathematics (MATH) - MATH 48B - PRECALCULUS II - Concepts and Connections - Students will develop conceptual understanding of rational, exponential, logarithmic, absolute value, composite, and piecewise-defined functions. They will demonstrate and communicate this

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
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Department - Mathematics (MATH) - MATH 54H - HONORS INSTITUTE SEMINAR IN MATHEMATICS - Using Appropriate sources of information - Analyze research questions posed by the instructor using appropriate sources of information. (Created By Department - Mathematics (MATH))

Assessment Method:
The instructor will grade the students' research presentation based on a rubric to be included with the assessment findings.
Assessment Method Type:
Research Paper

12/05/2016 - This class was not taught, so the SLO could not be assessed.
Result:
Target Met
Year This Assessment Occurred:
2015-2016

Assessment Cycles:
End of Academic Year
Course-Level SLO Status:
Active

Department - Mathematics (MATH) - MATH 54H - HONORS INSTITUTE SEMINAR IN MATHEMATICS - Presenting answers - Present answers to the defined research questions orally or in writing using appropriate mathematical language (Created By Department - Mathematics (MATH))

Assessment Method:
The instructor will grade the students' research presentation based on a rubric to be included with the assessment findings.
Assessment Method Type:
Presentation/Performance

Assessment Cycles:
End of Academic Year
Course-Level SLO Status:
Active

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
<p>57 - INTEGRATED STATISTICS II - Concepts and Connections - Students will develop conceptual understanding of descriptive and inferential statistics. They will demonstrate and communicate this understanding in a variety of ways, such as: reasoning with definitions and theorems, connecting concepts, and connecting multiple representations, as appropriate. (Created By Department - Mathematics (MATH))</p> <p>Assessment Cycles: End of Academic Year</p> <p>Start Date: 12/14/2015</p> <p>Course-Level SLO Status: Active</p>	<p>Assessment Method: Exam problem.</p> <p>Assessment Method Type: Exam - Course Test/Quiz</p> <p>Target for Success: 100% of students scoring 70% or better is the goal.</p> <p>Related Documents: Exam Q(2).pdf</p>	<p>10/26/2016 - 100% of students performed satisfactorily (>70%) on this exam question. I would consider that to be a success.</p> <p>Result: Target Met</p> <p>Year This Assessment Occurred: 2015-2016</p> <p>Resource Request: Support in growing Statway into a larger program to serve more students.</p> <p>Resource Request: This is a successful program that is offered at a large scale at other schools across the country. Now that it articulates to both UCs and CSUs, we ask for support in growing Statway into a larger program to serve more students.</p> <p>GE/IL-SLO Reflection: In performing this test of hypothesis, students must use translation, computation, critical thinking, and interpretation skills.</p> <p>GE/IL-SLO Reflection: In performing this test of hypothesis, students must use translation, computation, critical thinking, and interpretation skills.</p>	

Unit Assessment Report - Four Column
 Foothill College
 Program (PSME - MATH) - Mathematics AS

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
<p>Program (PSME - MATH) - Mathematics AS - 1 - Students completing their math program at Foothill College will be able to clearly communicate mathematical ideas through graphs, tables of data, equations, and verbal descriptions.</p> <p>SLO Status: Active</p>	<p>Assessment Method: Non-routine, open-ended take-home project where students have the opportunity to demonstrate their competence in analyzing settling time in a variety of ways, including numerical and graphical analysis, analytic work, and exposition of results.</p> <p>Assessment Method Type: Class/Lab Project</p> <p>Target: 100% success among those who submit it, with most students submitting it.</p>	<p>06/30/2016 - 31 of 32 completed the assessment on time; all responses were satisfactory or better. The straggler handed it in late and it was satisfactory. The prompt gave students opportunity to demonstrate their competence in a variety of ways, including numerical and graphical analysis, analytic work, and exposition of results.</p> <p>I attribute the high success rate to the form of the prompt: a nonroutine exercise, assessed as a take-home project allowing for all resources (text, notes, collaboration with classmates, expert consultation, internet resources). Students are directed to prepare their own paper. There's always a lot of sharing of mathematical results, but explanations that come in too similar earn lower grades or rejection for a grade at all. The richness of the exercise allows students many opportunities to demonstrate their competence. With so many opportunities, all students manage to complete the assessment satisfactorily.</p> <p>Result: Target Met</p> <p>Year This Assessment Occurred: 2015-2016</p> <p>GE/IL-SLO Reflection: This assessment requires creative/critical thinking, strong communication skills, and also computation.</p>	
<p>Program (PSME - MATH) - Mathematics AS - 2 - Students completing their math program at Foothill College will be able to construct appropriate mathematical models of natural phenomena, develop those models with appropriate mathematical</p>	<p>Assessment Method: In 2014/2015, we evaluated this SLO in Math 2B, one of our 3 Capstone Courses (1D/2A/2B). This assessment consists of a two-part problem from the second exam.</p> <p>Assessment Method Type:</p>		

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
techniques, and interpret results of those models SLO Status: Active	Exam - Course Test/Quiz Target: 70% Success Rate Related Documents: M2B_W15_Exam_2_PLO_Question(2).pdf		