



Mathematics

#1	<p>AS Mathematics Degree Student Learning Outcome</p> <ul style="list-style-type: none">The student will determine whether a given definition or theorem applies to a given problem and/or situation and use this definition and theorem appropriately if they apply.
	<p>Course in the degree plan that address this outcome</p> <ul style="list-style-type: none">Math 2415, Calculus III (The capstone course for an Associate's Degree in Mathematics at Palo Alto College)
	<p>Assessment Measure for this Outcome</p> <ul style="list-style-type: none">Embedded questions on the final exams in Math 2415 (Calculus III). The scores on the relevant questions will be quantified for all students taking Calculus III. (The questions used for this learning outcome on the spring 2010 final are #12, #14, and #15.)
	<p>Achievement Target for this Measure</p> <ul style="list-style-type: none">The students will master 60% of the assessment questions.
	<p>Findings:</p> <ul style="list-style-type: none">The students attained an 80% mastery on question #12The students attained a 64.4% mastery on question #14The students attained a 72.5% mastery on question #15Overall, on questions 12, 14, and 15, the students attained a mastery level of 72%
	<p>Related Action Plans</p> <ul style="list-style-type: none">The Mathematics department will create test item blue prints for the Math 2415 final exam along with detailed rubrics for the questions on the exam.The students exceeded our target mastery level by 12%. In the future, the Mathematics Department will develop a bank of questions that can be used on the final exam in Calculus III to assess this student learning outcome. The Mathematics faculty will be informed of this result and faculty teaching STEM math course (Math 1414, College Algebra (Precalculus Track), through Math 2415, Calculus III) will work together to improve the teaching of this student learning outcome.
#2	<p>AS Mathematics Degree Student Learning Outcome</p> <ul style="list-style-type: none">Students will use and interpret the language, notation, and applications of differential and Integral Calculus correctly and apply appropriate style and format on written work



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	and exams.
	<p>Course in the degree plan that address this outcome</p> <ul style="list-style-type: none"> Math 2415, Calculus III (The capstone course for an Associate's Degree in Mathematics at Palo Alto College)
	<p>Assessment Measure for this Outcome</p> <ul style="list-style-type: none"> Embedded questions on the final exams in Math 2415 (Calculus III). The scores on the relevant questions will be quantified for all students taking Calculus III. (The questions used for this learning outcome on the spring 2010 final are #5, #6, and #7.)
	<p>Achievement Target for this Measure</p> <ul style="list-style-type: none"> The student will master 60% of the assessment questions.
	<p>Findings</p> <ul style="list-style-type: none"> The students attained a 78.9% mastery on question #5 The students attained an 81.1% mastery on question #6 The students attained a 75.7% mastery on question #7 Overall, on questions 5, 6, and 7, the students attained a mastery level of 78.8%
	<p>Related Action Plan</p> <ul style="list-style-type: none"> The Mathematics department will create test item blue prints for the Math 2415 final exam along with detailed rubrics for the questions on the exam. The students exceeded our target mastery level by 18.8%. In the future, the Mathematics Department will develop a bank of questions that can be used on the final exam in Calculus III to assess this student learning outcome. The Mathematics faculty will be informed of this result and faculty teaching STEM math course (Math 1414, College Algebra (Precalculus Track), through Math 2415, Calculus III) will work together to improve the teaching of this student learning outcome.
#3	<p>AS Mathematics Degree Student Learning Outcome</p> <ul style="list-style-type: none"> The student will demonstrate the ability to visualize (through the use of pencil-to-paper interpretation or computer software) appropriate concepts and applications.
	<p>Course in the degree plan that address this outcome</p> <ul style="list-style-type: none"> Math 2415, Calculus III (The capstone course for an Associate's Degree in Mathematics at Palo Alto College)
	<p>Assessment Measure for this Outcome</p>



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	<ul style="list-style-type: none">• Embedded questions on the final exams in Math 2415 (Calculus III). The scores on the relevant questions will be quantified for all students taking Calculus III. (The questions used for this learning outcome on the spring 2010 final are #1, #7, #8, and #9.)
	<p>Achievement Target for this Measure</p> <ul style="list-style-type: none">• The student will master 60% of the assessment questions.
	<p>Findings</p> <ul style="list-style-type: none">• The students attained an 88.9% mastery on question #1• The students attained a 75.7% mastery on question #7• The students attained a 78.9% mastery on question #8• The students attained a 60% mastery on question #9• Overall, on questions 1, 7, 8 and 9, the students attained a mastery level of 76.9%
	<p>Related Action Plans</p> <ul style="list-style-type: none">• The Mathematics department will create test item blue prints for the Math 2415 final exam along with detailed rubrics for the questions on the exam.• The students exceeded our target mastery level by 16.9%. In the future, the Mathematics Department will develop a bank of questions that can be used on the final exam in Calculus III to assess this student learning outcome. The Mathematics faculty will be informed of this result and faculty teaching STEM math course (Math 1414, College Algebra (Precalculus Track), through Math 2415, Calculus III) will work together to improve the teaching of this student learning outcome.
#4	<p>AS Mathematics Degree Student Learning Outcome</p> <ul style="list-style-type: none">• The student will demonstrate good problem-solving techniques which will include, but not be limited to:<ul style="list-style-type: none">a. The use of a variety of approaches to solve a given problem.b. The selection of appropriate problem solving techniques.c. Correctly interpreting results and solutions.
	<p>Course in the degree plan that address this outcome</p> <ul style="list-style-type: none">• Math 2415, Calculus III (The capstone course for an Associate's Degree in Mathematics at Palo Alto College)
	<p>Assessment Measure for this Outcome</p> <ul style="list-style-type: none">• Embedded questions on the final exams in Math 2415 (Calculus III). The scores on the relevant questions will be quantified for all students taking Calculus III. (The questions used for this learning outcome on the spring 2010 final are #12 and #15.)



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	<p>Achievement Target for this Measure</p> <ul style="list-style-type: none"> The students will master 60% of the assessment questions.
	<p>Findings</p> <ul style="list-style-type: none"> The students attained an 80% mastery on question #12 The students attained a 72.5% mastery on question #15 Overall, on questions 12 and 15, the students attained a mastery level of 76.3%
	<p>Related Action Plans</p> <ul style="list-style-type: none"> The Mathematics department will create test item blue prints for the Math 2415 final exam along with detailed rubrics for the questions on the exam. The students exceeded our target mastery level by 16.3%. In the future, the Mathematics Department will develop a bank of questions that can be used on the final exam in Calculus III to assess this student learning outcome. The Mathematics faculty will be informed of this result and faculty teaching STEM math course (Math 1414, College Algebra (Precalculus Track), through Math 2415, Calculus III) will work together to improve the teaching of this student learning outcome.
#5	<p>AS Mathematics Degree Student Learning Outcome</p> <ul style="list-style-type: none"> The student will demonstrate the proper use of technology (particularly the graphing calculator) both effectively and appropriately.
	<p>Course in the degree plan that address this outcome</p> <ul style="list-style-type: none"> Math 2415, Calculus III (The capstone course for an Associate's Degree in Mathematics at Palo Alto College)
	<p>Assessment Measure for this Outcome</p> <ul style="list-style-type: none"> Embedded questions on the final exams in Math 2415 (Calculus III). The scores on the relevant questions will be quantified for all students taking Calculus III. (The questions used for this learning outcome on the spring 2010 final are #1, #4, and #15.)
	<p>Achievement Target for this Measure</p> <ul style="list-style-type: none"> The students will master 60% of the assessment questions.
	<p>Findings</p> <ul style="list-style-type: none"> The students attained an 88.9% mastery on question #1 The students attained a 68.9% mastery on question #4 The students attained a 72.5% mastery on question #15



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	<ul style="list-style-type: none">Overall, on questions 1, 4, and 15, the students attained a mastery level of 77.2%
	<p>Related Action Plans</p> <ul style="list-style-type: none">The Mathematics department will create test item blue prints for the Math 2415 final exam along with detailed rubrics for the questions on the exam.The students exceeded our target mastery level by 17.2%. In the future, the Mathematics Department will develop a bank of questions that can be used on the final exam in Calculus III to assess this student learning outcome. The Mathematics faculty will be informed of this result and faculty teaching STEM math course (Math 1414, College Algebra (Precalculus Track), through Math 2415, Calculus III) will work together to improve the teaching of this student learning outcome.