

Math 160, Trigonometry

Fall 2012

Student Learning Outcome Assessment

Math 160 Student Learning Outcomes (Spring 2012)

1. Analyze, sketch and apply the six trigonometric functions and polar equations using such principles as asymptotic, periodic, and reciprocal behavior, as well as plotting points generate by a table or electronic device.
2. Model, evaluate and solve equations and real-world problems using inverse functions, Law of Sines, Law of Cosines, technological tools, and algebraic techniques.
3. State, verify, and apply trig identities, including but not limited to reciprocal, co-functional and Pythagorean identities, sum and difference identities, double- and half-angle identities.

COURSE SLO ASSESSMENT REPORT, SCC

Department: Mathematics Course: Math 160

Year: 2012 Semester: Fall

1) Outcomes to be assessed	2) Means of assessment and criteria of success	3) Summary of data collected	4) Analysis of data	5) Plan of action/what to do next
<p>SLO #2 – Model, evaluate and solve equations and real-world problems using inverse functions, Law of Sines, Law of Cosines, technological tools, and algebraic techniques.</p>	<p>Using the department final, score #3 & 10 v1, and #4 & 13 v2 for Part 1. Success is 70% correct.</p> <p>Score #3 & 7 v1, and #1 & 7, v2 for Part II using the attached rubrics. Success = 3 on the first rubric and 3 or 4 on the second rubric.</p> <p>.</p>	<p>Number of students evaluated: 76</p> <p>What percent is this of the total students still enrolled in the course? All</p> <p>Total number of sections: 3</p> <p>Number of sections that were involved in the assessment: 3</p> <p>What percent of questions were successful according to your earlier criteria? Of the 2 M/C questions evaluated, 1 had a 87% passing rate or higher.</p> <p>Of the 2 free response questions, 1 had a 74% success rate.</p>	<p>Is this an acceptable result? No</p> <p>How does this compare with your expectations? Unfortunately, the results were not surprising. However, although these are not favorable results, the percentages were slightly higher than when previously assessed.</p> <p>Did you notice any particular problem areas? Yes, the linear velocity question had an overall 37% passing rate and the bearing question had a 28% rate.</p>	<p>What changes will be made in response to the results of the assessment? Teachers will be made aware of the problem areas so they can emphasize these trouble spots. Also, the difficulty of the bearing problem will be assessed, looking at what skill is being tested.</p> <p>Has there been observed improvement in the quality of student learning due to the changes? Yes, after adjusting the final exam last semester, there was an increase from 29% to 37% success rate for the linear velocity problem. However, much improvement is still needed.</p> <p>Are there plans to reassess the initial SLO? A similar outcome will be assessed according to the assessment cycle.</p>

Instructor A

#3/4	#10/13	#3/1	#7/7
% Correct	% Correct	% Success	% Success
79	38	83	48

Instructor B

#3/4	#10/13	#3/1	#7/7
% Correct	% Correct	% Success	% Success
85	15	60	49

Instructor C

#3/4	#10/13	#3/1	#7/7
% Correct	% Correct	% Success	% Success
96	60	80	68

There is a disparity of successful results amid the different instructors. There are always multiple factors that affect a class' performance (i.e. time of day, number or make up of students, experience of teacher). Perhaps several of these factors are attributing to these results.

Math 160 Trigonometry, Fall 2012, SLO Assessment

Three-point Rubric

http://www.delranschools.org/94120102516328467/lib/94120102516328467/3_point_math_rubric.pdf

3

- Shows you completely understand the math task.
- You have the correct answer, OR there is a minor computational error.
- You showed all work, and the explanation is crystal clear.
- The reader DOES NOT have to guess what you did and why you did it.

2

- Shows you understand most of the math task.
- You have the correct answer, OR there is a minor computational error.
- You have the explanation, but it is *not* clear. (It might not show all of the work.)
- The reader has to guess what you did and why.

1

- Shows you understand only a small part or none of the math task.
- You did not get the right answer, OR you got the right answer but there is **no** explanation at all.
- Your explanation is *not* clear.
- The reader has little clue what you did and why.

Five-point Rubric

5

- Shows you completely understand the math task.
- You have the correct answer, OR there is a minor computational error.
- You showed all work, and the explanation is crystal clear.
- The reader DOES NOT have to guess what you did and why you did it.

4

- Shows you understand most of the math task.
- You have the correct answer, OR there is a minor computational error.
- You have the explanation, but it is *not* clear. (It might not show all of the work.)
- The reader has an idea of what you did and why.

3

- Shows you understand about half of the math task.
- You have the correct picture but the equation may be incorrect.
- The reader has to guess what you did and why.

2

- Shows you understand only a small part of the math task.
- You did not get the right answer, OR you got the right answer but there is **no** explanation at all.
- Your explanation is *not* clear.
- The reader has little clue what you did and why.

1

Shows you did not understand the math.

- Your answer is wrong or left blank.
- You have no explanation.
- The reader has no clue as to what you did and why.

Assessment Cycle for Math 160

All SLOs should be assessed at least once within a three-year cycle. A complete assessment cycle includes: gathering assessment data, analyzing assessment data, sharing results within the department or discipline, and reporting results. In the matrix below, indicate the term in which each of your course SLOs will be assessed (inclusive of the entire assessment cycle).

SLO	Data Gathered	Data Analyzed	Data Shared Improvement Dialogue	Results Reported	Changes Implemented
SLO 1 Analyze, sketch and apply the six trigonometric functions and polar equations using such principles as asymptotic, periodic, and reciprocal behavior, as well as plotting points generate by a table or electronic device.	Late Fall 2011 and repeat every 3 years.	Beginning Spring 2012 and repeat every 3 years.	Mid Spring 2012 and repeat every 3 years.	By End Spring 2012 and repeat every 3 years.	Fall 2012 and repeat every 3 years.
SLO 2 Model, evaluate and solve equations and real-world problems using inverse functions, Law of Sines, Law of Cosines, technological tools, and algebraic techniques.	Late Fall 2012 and repeat every 3 years.	Beginning Spring 2013 and repeat every 3 years.	Mid Spring 2013 and repeat every 3 years.	By End Spring 2013 and repeat every 3 years.	Fall 2014 and repeat every 3 years.
SLO 3 State, verify, and apply trig identities, including but not limited to reciprocal, co-functional and Pythagorean ids, sum and difference ids, double- and half-angle ids.	Late Fall 2013 and repeat every 3 years.	Beginning Spring 2014 and repeat every 3 years.	Mid Spring 2014 and repeat every 3 years.	By End Spring 2014 and repeat every 3 years.	Fall 2015 and repeat every 3 years.