

May 2018

Assessment Plan for General Education in Mathematics

A. Goals

Mathematics: Students should be able to analyze quantitative information in order to solve problems and understand the world.

B. Objectives/Outcomes

Students should be able to:

B.1. Use mathematical methods and models to solve quantitative problems and to communicate solutions effectively.

B.2. Analyze and critically evaluate numerical and graphical data to draw reasonable and valid conclusions about real-world solutions.

C. Instruments/Measures of Evaluation

Mathematics General Education Courses:

To satisfy UL's Core General Education Requirements for Mathematics, students must complete 6 credit hours of mathematics and/or statistics.

However, students may use only one of the following courses to apply toward their 6 credit hours:

Math 102, Math 103&104, Math 105, Math 109, or Math 143.

Courses Assessed:

From Fall 2011 to present, the Math Department assessed Math 103&104 and Math 105 every fall and spring semester.

Beginning Fall 2017, the Math Department will assess all sections of Math 103&104 and Math 105 every Fall and Spring semester.

Beginning Spring 2018, the Math Department will assess all sections of Stat 214 every Fall and Spring semester.

Rubric for Evaluation:

The College Algebra Committee and the Statistics Committee create Course Embedded Assessment questions to be included in every College Algebra and Statistics final exam.

Evaluation Process:

The questions created by each committee are embedded into all final exams of the appropriate course.

All Instructors and Teaching Assistants receive the scoring rubric to report the results of their section to the Director of Freshman Mathematics.

D. Criterion of Success

An overall satisfactory performance by a student on the embedded questions is when a student scores an overall score of 60% or higher.

Outcomes B.1. and B.2. will be considered successful or achieved if at least 70% of the students score satisfactory.

Goal	Objectives (Students should be able to ...)	Instruments/Measures	Criterion of Success
Mathematical / Analytical Reasoning: Students should be able to analyze quantitative information in order to solve problems and understand the world.	Use mathematical methods and models to solve quantitative problems and to communicate solutions effectively.	CEA evaluation in Math 103&104, Math 105, and Stat 214	70% of students taking the final exam score 60% or higher on the CEA
	Analyze and critically evaluate numerical and graphical data to draw reasonable and valid conclusions about “real-world” solutions.	CEA evaluation in Math 103&104, Math 105, and Stat 214	70% of students taking the final exam score 60% or higher on the CEA

D. Findings

Common questions were embedded into the final exam of every section of Math 103/104 and Math 105. Each instructor was given a common rubric with which to follow and grade the questions. The results are as follows:

Fall 2017 Semester			
	Math 103/104	Math 105	All sections of Math 103/104 & 105
% of students scoring 60% or higher	27%	34%	30%

Spring 2018 Semester			
	Math 103/104	Math 105	All sections of Math 103/104 & 105
% of students scoring 60% or higher	38%	37%	38%

Spring 2018 Semester	
	Stat 214
% of students scoring 60% or higher	45%

D.1. Fall 2017 Summary

We collected 1020 responses, a 100% response rate, to the embedded questions. Math 103/104 had 468 responses and Math 105 had 552 responses. The percentage of students scoring 60% or higher was lower for Math 103/104 than for Math 105, which is usually true every semester. However, neither category nor the total met the criteria for success.

D.2. Spring 2018 Summary

We collected 353 responses, a 100% response rate, to the embedded questions. Math 103/104 had 234 responses and Math 105 had 119 responses. The percentage of students scoring 60% or higher was approximately the same for Math 103/104 and Math 105. However, neither category nor the total met the criteria for success. Statistics 214 had 581 responses, a 100% response rate. The percentage of students scoring 60% or higher did not meet the criteria for success.

E. Improvement Narrative

The results from our course embedded assessments did not meet the criteria for success and are consistent with past results. We will continue with our plans of informing students about the resources that are currently available to them to increase their success in these courses. Over the past several semesters, the Math Department has created, improved, or modified resources for these courses; however, it is evident that not all students are utilizing these resources or are waiting until too late in the semester.

The math department analyzed the results of the course embedded assessments over the past six semesters and compared the results with many other factors. Based on this analysis, we are considering modifying our assessment methods for the following reasons.

1. The pass rates for Math 103, Math 105 and Stat 214 are consistent over the past 6 semesters and show that an appropriate number of students are passing the courses. However, the course embedded assessments do not reflect this.
2. The math department currently uses multiple questions to assess the outcomes and objectives rather than one or two specific questions. Consequently, the results of the embedded questions have an approximately normal distribution. This is true for the past 6 semesters. Therefore, our criteria for success is rather unrealistic because between 30% and 40% of the students will, in theory, score 60% or higher.