



**Course-Level Assessment Project
Final Report**

To complete the Final Report, type your responses to the prompts below. Share a copy of the document with your supervisor and the Associate Provost of Assessment and Institutional Research.

Faculty Name(s): Tom Shields (started project)
Jenelle Cutitta and Janice Stencil (took over project 2021/SP)
Division/Department: Mathematics and Engineering
Course Assessed: MATH-123

Step 1. Define

Explain the purpose or rationale for assessing the selected course.

Identify which course objective(s) were assessed. Briefly explain why you selected these course objectives for assessment.

Identify to which program goal(s) selected course objective(s) align.

Tom Shields:

The purpose for assessing MATH-123 is to improve student learning of precalculus.

The course objectives to be assessed are:

5. Determine the zeros of polynomial functions using analytic techniques, such as synthetic division, and graphical techniques.
6. Solve polynomial, rational, exponential, and logarithmic equations.

I selected these because they are important for calculus and other math courses, and because they are measurable.

Both of these objectives align with Program Goal 3: Quantitative and Scientific Reasoning.

Step 2. Design

Describe the instrument (project/assignment) used to assess identified course objective(s).

What benchmarks and/or controls were established?

Explain how the assessment instrument was externally reviewed and validated.

Tom Shields:

I will include common questions (ones that are identical across all sections of MATH-123) on the selected objectives on the second and third unit tests and on the final exam.

Jenelle Cutitta and Janice Stencil:

A goal of 75% was established as a benchmark. That is, the common questions with an average of 75% or better indicates that the goal was met. In addition, common questions that had an average of between 70% and 75% were seen as borderline. Any questions with outcomes less than 70% indicates that the goal was not met.

Janice was not teaching the course and was able to give an “outsider” perspective on the common questions that were implemented for the Spring 2021 semester unit tests.

Step 3. Implement

Explain how the assessment was implemented.

Did any unexpected challenges arise in implementing the assessment?

Jenelle Cutitta and Janice Stencil:

Prior to Spring 2021 the instructors for each section of MATH-123 were provided with the common questions for the Unit 2 and Unit 3 tests. Instructors were also provided with a common final exam, but data was only collected for the questions pertaining to Chapters 2 and 3. Points were assigned, but no rubric for consistency of point break-down.

In Spring 2021, instructors were given common questions for all unit assessments with a rubric for grading consistency. The rubric detailed point break-down. A common final exam was given, but data was not collected.

Challenges:

- Tom Shields started the project but left the division before the project was completed. Jenelle and Janice received some documentation from Tom, but there were gaps in what was provided.
- Most instructors recorded all data, but occasionally some data was missed and/or not recorded.

Step 4. Analyze

Explain the data that was collected and how the data was analyzed.

To what degree did students meet the established benchmarks?

Consider intention of learning activity and assessment as compared to results.

Jenelle Cutitta and Janice Stencil:

As far as how the data was collected, see Steps 2 and 3 above.

Tom Shields had created an Excel spreadsheet to compile the data from all sections. Jenelle and Janice used the same spreadsheet format to compile data for Spring 2021.

problem	overall student score, fall 2019		overall student score, fall 2020		overall student score, spring 2021		problem topic
	Grades A – D (82 students)	Grades A – F (95 students)	Grades A – D (96 students)	Grades A – F (107 students)	Grades A – D (32 students)	Grades A – F (53 students)	
1	77.3%	76.6%	78.2%	75.6%	58%	48%	rational functions
2	83.8%	78.4%	72.5%	70.2%	76%	66%	polynomials
3	82.8%	80.7%	92.9%	89.9%	47%	39%	exponential equations
4	72.9%	67.3%	74.4%	71.7%	49%	36%	logarithmic equations
5	82.4%	75.5%	65.2%	61.6%	Did not collect from Final Exam.		exponential functions
6	77.3%	69.3%	79.3%	72.9%			polynomials
7	64.2%	57.4%	86.1%	78.7%			logarithmic equations
8	62.1%	54.3%	70.4%	64.2%			polynomials

Step 5. Modify/Maintain

Based on analysis of data, describe changes made to the course and/or course materials.

Summarize the results of implementing changes, re-administering the assessment, and collecting and analyzing new data.

Jenelle Cutitta and Janice Stencil:

Jenelle and Janice worked on creating more consistency across sections of MATH-123 in the Spring 2021 semester. However, changes to the Precalculus curriculum will be coming from the statewide Math Affinity Group.

Final Results and Recommendations

Jenelle Cutitta and Janice Stencil:

The results are disappointing but based on the changes coming from the Math Affinity Group, Precalculus will change for the better of our students. A new Course Level Assessment Project will be completed for the new Precalculus course(s) – projected Summer 2022.

Supervisor Signature Brianna L. McGinnis Date 06/08/2021

Please forward a copy of the signed report to the Associate Provost of Assessment and Institutional Research.