

## Course Outcomes Guide (COG)

**Course Title:** MAT 161 - Precalculus

**Date:** May 2019

**Course Team:** Jennifer Szczesniak

### Expected Learning Outcomes

#### GENERAL EDUCATION

**Upon successful completion of this course, a student should be able to:**

1. Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.
2. Represent mathematical information and communicate mathematical reasoning symbolically and verbally.
3. Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning.

#### COURSE LEARNING OUTCOMES (SLO)

**Upon successful completion of this course, a student should be able to:**

1. Understand the relationship between an equation and its graph.
2. Develop an improved understanding of exponential, logarithmic, and trigonometric functions.
3. Demonstrate the ability to use identities to simplify or rewrite an expression.
4. Solve application problems involving polynomial, exponential, logarithmic and trigonometric functions and systems of equations.
5. Effectively work in a group setting to solve problems.
6. Use technology (graphing calculators, scientific calculator, etc.) to assist in the problem solving process.
7. Use proper terminology to communicate results or to describe how the results were obtained.

### Assessment

A ten question multiple-choice assessment tool was developed using retired questions from the Praxis and SAT exams.

### Validation

Since we chose questions from retired exams, we have national data to compare our scores with.

### Results

Overall results for the assessment put the total score for HCC students close to the benchmark score. SLO 1 is again the weakest area but the scores for this outcome are improving. Student success in the course has returned to historical levels after a period from 16/FA to 17/Su where they were higher than normal.

### Follow-up

This course will be undergoing several modifications in the upcoming year. As part of the redesign of the math courses the content is being adapted to remove overlapping content with MAT 101 and to increase the rigor. Also after a successful trial of an adaptive homework system in 19/SP, this will be implemented for future semesters to all sections of MAT 161.

After a couple of summers of forgetting to get the assessment tool to the instructors, I have already sent it to the instructor for 19/SU.

### Budget Justification

No budget resources are immediately anticipated.

### SLOA Results

	16/SU	16/FA	17/SP	17/SU	17/FA	18/SP	18/SU	18/FA	19/SP
# Active students	22	49	47	13	52	45	32	61	57
% W	13.6	2.0	4.3	30.8	11.5	4.4	15.6	0	3.5
*% walk-away Fs	4.5	2.0	6.4	0	7.7	6.7	9.4	8.2	7.0
% Success (A,B,C)	45.5	81.6	80.9	61.5	71.2	68.9	43.8	72.1	71.9
Common Assessment Score (out of 10)	8.12	8.43	7.61	--	7.74	7.21	--	7.91	7.69
Benchmark Score	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79
Mean course grade	1.53	2.65	2.67	2.78	2.65	2.47	1.74	2.41	2.58
Item Analysis <b>Weakest Content Areas</b>	SLO1	SLO1	SLO1	NA	SLO1	SLO1	NA	SLO1	SLO1

\* Walk-away Fs = Did not take the final exam and received a grade of F.