Assessment: Course Four Column

Courses (MATH) - Math

MATH 126 OWENS:Pre Calculus I

Course Outcomes	*Assessment Measures*	*Results*	*Actions*
Linear, quadratic, polynomial, rational, absolute value, logarithmic, and exponential - Solve a variety of equations and inequalities including linear, quadratic, polynomial, rational, absolute value, logarithmic, and exponential. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question #9 (exponential) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 64% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** Throughout the semester, students had an opportunity to solve a variety of the other types of equations, though those equations with exponentials and logarithms seem more difficult for students. I will find a way for students to gain more understanding of exponentials and (logs—they are related) by including some more problems in the weekly module for which students can gain more feedback. (01/22/2019)
Linear, quadratic, polynomial, absolute value, rational, greatest integer, exponential, logarithmic and piecewise-defined functions - Graph a variety of functions including linear, quadratic, polynomial, absolute value, rational, greatest integer, exponential, logarithmic and piecewise-defined functions by finding domain, range, zeros, intercepts, asymptotes, and describing symmetries **Course Outcome Status:** Active	**Assignment - Written -** Question #5 (polynomial) Question # 6 (rational) Question #10 (transformations) Question #11 (logarithmic) Question #12 (piecewise) Question #13 (circle) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 45% 73% 55% 68% 91% 9% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** In general, I think it may be problematic to use only the computer for graphing. I will provide students an opportunity to do some graphing by hand, most likely on a quiz or other lower-risk assessment. I will record some videos that demonstrate how to graph in our homework management system. (01/22/2019)

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Next Assessment: 2022-2023			
Two or three variables using substitution, addition, and Cramer's Rule - Solve systems of equations with two or three variables using substitution, addition, and Cramer's Rule. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question #1 (3 x 3 linear) Question #2 (nonlinear) Question #14 (Cramer's rule) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 59% 36% 64% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** I will add some "Deeper Dive" problems into the modules so students can explore the idea of solving a system of equations in more depth. (01/22/2019)
Operations on complex numbers and matrices - Perform operations on complex numbers and matrices. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question #4 (multiplication) Question #3 (determinant) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 36% 45% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** Mistakenly, I thought these were easier problems compared to some of the material we cover in this course. Again, I will explore the idea of providing more opportunities for students to get feedback from me on these type of problems. (01/22/2019)
Real-world problems involving quadratics, linear systems of equations, exponential and logarithmic functions - Solve a variety of real-world problems involving quadratics, linear systems of equations, exponential and logarithmic functions **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question # 7 (quadratic) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 0% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** I will place greater emphasis on how functions are used to model real-world phenomena. More importantly, I will be very clear in telling students that the model needs to be memorized. Many students did not memorize the model for this particular problem. (01/22/2019)
Operations on functions, find the domain and range of a function as well as the inverse and difference quotient - Perform operations on functions, find the domain and range of a function as well as the inverse and difference quotient **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question # 8 (composition) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 36% correct NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** Students get hung up on finding the domain of composite functions. Typically, they actually form the composite function correctly. I would like to add some "Deeper dive" problems in the WebCampus modules that would explore the concept more deeply than they are perhaps getting from the homework and

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			resources in MyMathLab. (01/22/2019)
synthetic division, the Division algorithm, Remainder Theorem, and Factor Theorem to factor polynomials - Use synthetic division, the Division algorithm, Remainder Theorem, and Factor Theorem to factor polynomials **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Question #15 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 91% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	**Action:** Students typically do not have much trouble with synthetic division, but again, I will provide more opportunities for students to demonstrate their understanding prior to the exam. (01/22/2019) **Follow-Up:** Assessment tool: Final exam Average: 60.09%, Median: 72.44% Twenty-two students took the final. In every one of my math classes the final exam average is always in the 60% – 69% range. I hate that over the years this has not changed much in spite of the tweaks that I try to improve the courses. I am hoping that this idea of having additional problems in the module that may bring more understanding will help. 7 out of 21 students who completed the course earned a D or F. I am finding this course to be one of the more difficult courses to teach. For the first time in this semester, I noticed high school students who signed up for the course. Anecdotally, I believe that the most of the students who received a D or F suffered from poor study skills as opposed to a lack of mathematical knowledge. Clearly some had issues with both, but in the coming year I would like to focus on incorporating more

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			study and test-taking strategies into the course. (01/22/2019)