Assessment: Course Four Column

Courses (MATH) - Math

MATH 128:Precalculus and Trigonometry

Course Outcomes	Assessment Measures	Results	Actions
Solve a variety of equations and inequalities - Solve a variety of equations and inequalities including linear, quadratic, polynomial, rational, absolute value, logarithmic, and exponential **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 06/20/2016	**Assignment - Written -** F Question #9 (exponential) 3 & 4 Question #10 (logarithmic) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 17% 55% NOTE: Percent refers to the percentage of students who earned full credit on the problem. (01/22/2019)	
Functions including 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 **Next Assessment:** 2022-2023	**Assignment - Written -** G Question #1 (piecewise) G Question #2 (polynomial) G Question #3 (rational) G Question #4 (transformations) G Question #5 (logarithmic) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 83% 667% 78% 61% 67% (01/22/2019)	
Solve systems of equations with two or three variables using substitution, addition, or Cramer's Rule - Solve systems of equations with two or	**Assignment - Written -** 9 Question #1 (linear) 9 Question # 2 (Cramer's rule) 9 Question #3 (nonlinear)	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 67% 48%	

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three variables using substitution, addition, or Cramer's Rule. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	9 Question #4 (nonlinear) **Criterion:** NA	71% 57% (01/22/2019)	
Perform operations on complex numbers and matrices - Perform operations on complex numbers and matrices **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** 9 Question #5 (multiplication) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 57% (01/22/2019)	
Real-world problems - 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 -** F Question #3 (quadratic) 3 & 4 Question #11 (exp. Growth) 3 & 4 Question #8 (logarithmic) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 50% 91% 91% (01/22/2019)	
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 -** F Question #1 (diff. quotient) F Question #2 (composition)	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 78% 22% (01/23/2019)	
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 -** 3 & 4 Question #2 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 82% (01/23/2019)	
Six trigonometric functions - Compute values of the six trigonometric functions and their inverses **Course Outcome Status:** Active	**Assignment - Written -** 5 & 6 Question #3 5 & 6 Question #6 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 67% 61% (01/23/2019)	

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Next Assessment: 2020-2021 **Start Date:** 06/20/2016			
Trigonometric identities - Verify and use trigonometric identities **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** 7 & 8 Question #12 7 & 8 Question #1 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 12% 35% (01/23/2019)	
Graph and analyze - Graph and analyze parametric equations, trigonometric functions, conic sections, vectors, and polar equations and convert between the Cartesian and polar coordinate systems **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** G Question #6 (sine/cosine) G Question #7(sine/cosine) G Question #8 (tangent/cotangent) G Question # 9 (secant/cosecant) G Question #10 (conic) G Question #11 (polar) G Question #12 (parametric) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 56% 44% 89% 50% 50% 83% 67% (01/23/2019)	
Vectors and use vectors to solve real-world problems - Perform operations with vectors and use vectors to solve real-world problems **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 06/20/2016	**Assignment - Written -** F Question #13 7 & 8 Question # 7 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 28% 82% (01/23/2019)	
Trigonometric equations and right or oblique triangles - Solve trigonometric equations and right or oblique triangles **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** F Question #10 (right triangle) F Question #11 (trigonometric) F Question #13 (oblique) **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 83% 0% 28% (01/23/2019)	
Complex numbers in trigonometric form and perform operations - Express complex numbers in trigonometric form and perform operations with them **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** F Question #14 7 & 8 Question #9 **Criterion:** NA	**Reporting Period:** 2017-2018 **Criterion Met:** N/A 67% correct 82% correct (01/23/2019)	
Arithmetic and geometric sequences	**Assignment - Written -** F Question #	**Reporting Period:** 2017-2018	**Action:** Assessment tools:

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- Describe and define arithmetic and geometric sequences and make effective use of sigma notation **Course Outcome Status:** Active **Next Assessment:** 2022-2023	5 (arithmetic) F Question #6 (arithmetic) F Question #7 (geometric) F Question #8 (geometric) **Criterion:** NA	**Criterion Met:** N/A 44% correct 67% correct 61% correct 67% correct (01/23/2019)	Chapters 3 & 4, 5 & 6, 7 & 8, and 9 Exams, Graphing Final (denoted by G) exam, Final Exam denoted by (F) 18 students took both finals, the chapters 5 & 6 exam. Twenty-two students took the chapters 3 & 4 exam. Twenty-one students took the chapter 9 exam. 17 students took the chapters 7 & 8 exam. In the above assessment, the percentage given is for the number of students who earned FULL credit on a problem. Chapter 3 & 4 Exam median 77.95% Chapters 5 & 6 Exam median 74.05% Chapters 7 & 8 Exam median 49.32% Ouch! Chapter 9 Exam median 80% Graphing Final median 74.58% Final Exam median 68.46% I had initially looked at the averages which were much lower due to some students earning 0% on the final, so I felt the median was more reflective. The students did the worst on the trigonometry chapters. The first change was to make sure that the material on the binomial theorem and mathematical induction gets assessed. One of the changes I will be making in most of my courses for the coming year is to add some

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				"Deeper Dive" exercises to the modules in WebCampus. These will be low-risk assessments that will further explore the material covered in the lectures. I am going to redo the lectures for the trigonometry portion. I do not think I am communicating clearly there. I will also add some non-computerized graphing assessments. I think having to graph on the computer enables students to miss some of the nuances of graphing. In addition, I will add more videos that illustrate how to graph in our homework management system. (01/23/2019)