Assessment: Course Four Column

Courses (MATH) - Math

MATH 127:Precalculus II

Course Outcomes	*Assessment Measures*	*Results*	*Actions*
Compute values of the six trigonometric functions and their inverses - Compute values of the six trigonometric functions and their inverses **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Chapter 5 exam Problems # 7, 8, 9, 10, 11, 15 Final exam Problems # 1, 2, 5 **Criterion:** 70% or better on problems	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 5 Exam Problem # 7: 92% 8: 92% 9: 77% 10: 85% 11: 92% 15: 69% Final Exam Problem # 1: 100% 2: 100% 5: 91% Results Analysis: It appears that the students grasped this concept well and had high achievement in this outcome. I do take extra time on these topics because they come up for the remainder of the semester and are fundamental to the students' learning. This class was able to retain the methods taught for this objective and show it on the final. (01/17/2019)	**Action:** I do not think I need to change my approach on this topic, taking the time to make sure the students have this seems to work. (01/17/2019)
Solve right or oblique triangles - Solve right or oblique triangles. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Chapter 5 exam Problems # 14, 16, 17, 18, 19, 20 Final exam Problems # 4, 6	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 5 Exam Problem #	**Action:** I've noticed that students grasp bearings well enough in the early part of the course when they are presented, but then tend to

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	Criterion: 70% or better on problems	14: 92% 16: 92% 17: 77% 18: 85% 19: 92% 20: 85% Final Exam Problem # 4: 100% 6: 64% Results Analysis: Again, students grasped soling triangles well for the early part of the course. Number 6 on the final had a lower success rate. It was a word problem using bearings. (01/17/2019)	forget how they work before they come up again later in chapter 8. I will incorporate bearings in more problems between the two chapters to help students remember. (01/17/2019)
Graph and analyze trigonometric functions - Graph and analyze trigonometric functions. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Chapter 6 exam Problems # 10, 11, 12, 13, 14 Final Exam Problems # 8, 9 **Criterion:** 70% or better on problems	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 6 Exam Problem # 10: 100% 11: 92% 12: 58% 13: 75% 14: 67% Final Exam Problem # 8: 73% 9: 82% Results Analysis: I am happy with the students' achievement level here as well. The low percentage on problem 12 of the chapter 6 exam was on a problem that had a phase shift, vertical translation, and period change, so it was challenging. On a similar problem on the final (number 9) more students were able to successfully complete the problem. (01/17/2019)	**Action:** I think it would be helpful to have a day at the end of the chapter 6 discussion where the students deal with more complicated graphing problems together to help reinforce what was taught. I'm not sure how to fit this in the schedule however. (01/17/2019)
Solve trigonometric equations - Solve trigonometric equations. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Assignment - Written -** Chapter 7 exam Problems # 15, 16, 17, 18	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 7 exam	**Action:** I can make more time to do more examples like this in class but reducing some of the other

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	Final Exam Problems # 14, 15, 16, 17 **Criterion:** 70% or better on problems.	Problem # 15: 73% 16: 0% 17: 82% 18: 100% Final Exam Problem # 14: 82% 15: 36% 16: 55% 17: 82% Results Analysis: In general the students did well with this outcome, but on a couple of problems there was much more struggle than I would like. Problem 16 on the chapter 7 exam is a particular concern since no students successfully completed the problem, and most of them skipped it altogether. Problem 15 on the final was a similar equation and on 36% of the students were able to complete it then, which is better but still not good. These problems were ones that involved squaring the equation to introduce a Pythagorean identity. Because of time constraints, we were only able to do one example like this in class. (01/17/2019)	examples we discuss when solving trigonometric equations. (01/17/2019)
Perform operations with 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:** 2022-2023	**Exam -** Chapter 8 exam Problems #8, 9, 10, 11 Final exam Problems # 23, 24 **Criterion:** 70% or better on problems.	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 8 Exam Problem # 8: 73% 9: 64% 10: 100% 11: 73% Final Exam Problem # 23: 82% 24: 82% Results Analysis: The students worked well with the vectors and were able to perform operations with them. Some students even employed vector methods to work with polar coordinates and complex numbers. This semester I did try a new tactic with vectors and focused more on algebraic	**Action:** I will continue putting the focus more strongly on algebraic vectors. (01/17/2019)

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		vectors and their relation to our previous topics than I focused on generic space vectors. (01/17/2019)	
Express complex numbers in trigonometric form and perform operations with them - Express complex numbers in trigonometric form and perform operations with them. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Chapter 8 exam problems # 12, 13, 14 Final Exam Problem # 26 **Criterion:** 70% or better on problems.	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 8 Problem # 12: 73% 13: 36% 14: 64% Final Exam Problem # 26: 82% Results Analysis: Problem 13 on the chapter 8 exam was about changing a complex number from trigonometric to standard form. Students struggled with what the symbols meant. (01/22/2019)	**Action:** I will focus more on the relationship between algebraic vectors and complex numbers represented in trigonometric form. The students who were most successful in this outcome made that connection and I think it will help all of my students. (01/22/2019)
Graph and analyze parametric and polar equations and convert between the Cartesian and polar coordinate systems - Graph and analyze parametric and polar equations and convert between the Cartesian and polar coordinate systems. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Chapter 8 exam Problems # 16, 17, 18 Final exam problems # 27, 28 **Criterion:** 70% or better on problems	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Chapter 8 Problem # 16: 64% 17: 91% 18: 36% Final Exam Problem # 27: 45% 28: 73% Results Analysis: Problem 18 on the chapter 8 exam asked the students to convert a set of parametric equations to Cartesian form and graph the result. The equations involved sine and cosine and gave the students particular trouble. Problem 28 on the final was similar and students did better there. They did ask me specific questions about problem 18 before the final and seemed to understand the discussion of the method better during review. (01/22/2019)	**Action:** The students didn't understand the first time around that when a trigonometric function was part of the parametric equations, they should find a trigonometric identity to convert the equations to Cartesian form. I will stress this more strongly in the future when we discuss parametric equations. (01/22/2019)
Graph and analyze conic sections - Graph and analyze conic sections.	**Exam -** Final exam Problem # 29, 30	**Reporting Period:** 2017-2018	**Action:** I do not plan to make

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Course Outcome Status: Active **Next Assessment:** 2022-2023	**Criterion:** 70% or better on problems.	**Criterion Met:** Yes Final exam Problem # 29: 73% 30: 64% Results Analysis: The students had no trouble with conic sections despite the topic being covered quickly and only assessed on the final. I am very happy with their results here. I have been teaching conic sections as one unit instead of breaking them up the way the textbook sections do and I think that has been helping the students make connections between the different conic equations. (01/22/2019)	major changes here. My tenure committee review suggested that I use technology to help me draw the sections when teaching so I can make tidier pictures, so I will try to adopt that tactic. (01/22/2019) **Follow-Up:** I had a high student retention rate in this class. Only 4 students withdrew or dropped the entire semester (26%). I wanted to assess this course because most of these students were students that I had also instructed in MATH 126 in the fall semester. It seems like when I can teach students in sequence they have higher achievement rates. (01/22/2019)