**MATH 127 Precalculus II**

**Section Number(s): 1002**

**Instructor: Daniel T. Murphree**

**Academic Year: 2021-2022**

**Semester: Spring**

**# of Students: 27**

**Complete and submit your assessment report electronically to your department chair. Course and general education outcomes are counted as achieved if 62% or more of students answered the problems associated with the outcome correctly.** **As needed, please attach supporting documents and/or a narrative description of the assessment activities.**

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| **General Education Objectives** | **Class/Course Outcomes** | **Assessment Measures** | **Course Outcome Assessment Results** | **General Education Outcome Assessment Results** | **Outcome Results Analysis** |
|  | In the boxes below, summarize the outcomes assessed in your class or course during the last year*.* If this is a GenEd class, include the appropriate GenEd objectives. | In the boxes below, list the proctored assignments and which problems on those assignments you used to assess each outcome. | In the boxes below, give the percentage of students who answered the problems correctly and indicate if the course outcome was achieved. | In the boxes below, give the weighted average of the percentages of students who met course learning outcomes and indicate if the general education outcome was achieved. | In the boxes below, please reflect on this outcome’s results and summarize how you plan to use the results to improve student learning. |
| Demonstrate knowledge of mathematical notation and concepts. | **Outcome #1:**  Compute values of the six trigonometric functions and their inverses | Proctored assignment:  Midterm  Problem numbers:  7.2.1  7.3.27 | Results:  7.2.1: 86.96%  7.3.27: 78.26%  Average: 82.61%  Criterion Met: Yes. | Average percentage: 61.59%  Criterion Met: No | 1. Results Analysis: My students struggled with solving trigonometric equations and working with complex numbers in trigonometric form. Solving trigonometric equations is a difficult topic and this being an online class compounds that difficulty.  2. Action Plan: I will make more videos for solving trigonometric equations to help students see how to complete the common types of problem. |
| **Continued:** Demonstrate knowledge of mathematical notation and concepts. | **Outcome #2:**  Solve equations involving trigonometric functions and their inverses. | Proctored assignment:  Midterm  Problem numbers:  8.4.5  8.4.6 | Results:  8.4.5: 47.83%  8.4.6: 52.17%  Average: 50%  Criterion Met: No |
| **Outcome #3:**  Express complex numbers in trigonometric form and perform operations with them. | Proctored assignment:  Final  Problem numbers:  9.5.2  9.5.15 | Results:  9.5.2: 73.91%  9.5.15: 30.43%  Average: 52.17%  Criterion Met: No |
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| Apply mathematical concepts and operations in proper written or graphical format | **Outcome #4:**  Analyze and draw the graphs of the six trigonometric functions and their inverses. | Proctored assignment:  Midterm  Problem numbers:  7.4.6  7.5.1  7.6.11 | Results:  7.4.6: 65.22%  7.5.1: 86.96%  7.6.11: 82.61%  Average: 78.26%  Criterion Met: Yes | Average percentage: 74.64%  Criterion Met: Yes | 1. Results Analysis: I am very happy with the results I see in these outcomes. My online students did much better than my live students with these outcomes. The students struggled the most with graphing parametric equations.  2. Action Plan: I plan to make videos explaining parametric equations using Desmos to demonstrate the relation between the equations and the graph. |
| **Outcome #5**  Analyze and draw the graphs of parametric and polar equations and convert between Cartesian and polar coordinates. | Proctored assignment:  Final  Problem numbers:  9.3.15  9.4.1 | Results:  9.3.9: 47.83%  9.4.1: 86.96%  Average: 67.40%  Criterion Met: Yes |
| **Outcome # 6**  Analyze and graph equations representing conic sections. | Proctored assignment:  Final  Problem numbers:  10.1.16  10.3.1 | Results:  10.1.16: 65.22%  10.3.1: 91.30%  Average: 78.26%  Criterion Met: Yes |
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| Apply relevant mathematical skills in solving real-world problems. | **Outcome #7:**  Solve right and oblique triangles | Proctored assignment:  Final  Problem numbers:  9.1.8  9.2.2 | Results:  9.1.8: 69.57%  9.2.2: 95.65%  Average: 82.61%  Criterion Met: Yes | Average percentage: 68.48%  Criterion Met: Yes | 1. Results Analysis: While all of the objectives were achieved, I’m concerned about the students not having been able to grasp the basic concepts of vectors. It’s surprising to me that the simpler of the vector topics has been a challenge for all of my students this semester.  2. Action Plan: I plan to help the students focus on the basics of vectors by sending regular emails to help connect the concepts from simple to difficult. |
| **Outcome #8:**  Perform operations with vectors and use vectors to solve real-world problems. | Proctored assignment:  Final  Problem numbers:  9.6.5  9.7.1 | Results:  9.6.5: 26.09%  9.7.1: 82.61%  Average: 54.35%  Criterion Met: No |

**Notes: This class was very successful. Only two students failed, and two students withdrew for an 85% success rate. I think helping the students to keep motivated with regular reminders was useful this semester.**

I have reviewed this report:

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Department Chair Dean

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_­\_\_\_\_\_\_

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Vice President of Academic Affairs and Student Services

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