**MATH 120E Fundamentals of College Mathematics Expanded**

**Section Number(s): 1002**

**Instructor: Daniel T. Murphree**

**Academic Year: 2021-2022**

**Semester: Fall**

**# of Students: 31**

**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 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 system | **Outcome #1:**  Solve problems using the basic rules of probability. | Proctored assignment: Proctored Exam 3  Problem numbers:  11.1.9  11.4.11  11.7.55 | Results:  11.1.9: 52.94%  11.4.11: 70.59%  11.7.55: 47.06%  Average: 56.86%  Criterion Met: No | Average percentage: 64.15%  Criterion Met: Yes | 1. Results Analysis: The general education outcome was met, though barely. The course learning outcome that was a challenge for this class was on solving problems using the basic rules of probability. Probability is always a challenging topic for students in MATH 120, but usually not the basic calculations like we see here. The one basic set theory problem that did not do well was on using the cardinal number formula and the probability concepts require a formula use as well.  2. Action Plan: I will take more time on formula usage in the class by changing the homework to focus on formulas. |
| **Outcome #2:**  Solve problems using basic set theory. | Proctored assignment: Proctored Exam 1  Problem numbers:  2.4.55  2.3.93cardinal number formula  2.3.7  2.3.25 | Results:  2.4.55: 71.43%  2.3.93: 33.33%  2.3.7: 90.48% 2.3.25: 90.48%  Average: 71.43%  Criterion Met: Yes |
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| Apply mathematical concepts and operations in proper written or graphical format | **Outcome #3:**  Follow appropriate mathematical format and use proper mathematical notation in solving problems. | Proctored assignment: Proctored Exam 1 &  Problem numbers:  2.1.25  3.2.7  3.6.19  3.5.23  9.1.21  11.2.68 | Results:  2.1.25: 95.24%  3.2.7: 90.48%  3.6.19: 47.62%  3.5.23: 42.86%  9.1.21: 94.44%  11.2.68: 11.76%  Average: 63.73%  Criterion Met: Yes | Average percentage: 63.73%  Criterion Met: Yes | 1. Results Analysis: This learning outcome was met, though the percentage was barely high enough. This is one of the most difficult outcomes to analyze in an online class, but it is of note that the lowest topic was taken from probability and the other low topics were both from logic. The logic topics were specifically on DeMorgan’s laws and using the contrapositive. From how the rest of the logic module went, it appears that students were OK with the ideas of logic but had trouble specifically with problems involving notation.  2. Action Plan: I will add a notation topic review specifically for MATH 20. |
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| Apply relevant mathematical skills in solving real-world problems  **Continued:**  Apply relevant mathematical skills in solving real-world problems | **Outcome #4:**  Use mathematical formulas to evaluate problems involving financial data. | Proctored assignment: Proctored Midterm Exam  Problem numbers:  8.3.3  8.4.7  8.5.29  8.6.1 | Results:  8.3.3: 72.22%  8.4.7: 50%  8.5.29: 27.78%  8.6.1: 55.56%  Average: 51.39%  Criterion Met: No | Average percentage: 68.46%  Criterion Met: Yes | 1. Results Analysis: The general education outcome was met very well as well as all of the course learning outcomes except for using mathematical formulas. It was noted earlier in this analysis that topics involving formulas turned out to be a struggle for this class.  2. Action Plan: I will take more time on formula usage in the class by changing the homework to focus on formulas. |
| **Outcome #5:**  Solve problems using dimensional analysis | Proctored assignment: Proctored Final Exam  Problem numbers:  9.1.9  9.1.23 | Results:  9.1.9: 94.44%  9.1.23: 88.89%  Average: 91.67%  Criterion Met: Yes |
| **Outcome #6:**  Identify and analyze statistical data. | Proctored assignment: Proctored Final Exam  Problem numbers:  12.1.52  12.2.3  12.3.23  12.4.37 | Results:  12.1.52: 76.47%  12.2.3: 88.24%  12.3.23: 52.94%  12.4.37: 82.35%  Average: 75%  Criterion Met: Yes |
| **Outcome #7:**  Use formal and symbolic logic to analyze arguments and draw valid conclusions. | Proctored assignment: Proctored Midterm Exam  Problem numbers:  3.3.27  3.7.11 | Results:  3.3.27: 100%  3.7.11: 76.19%  Average: 88.10%  Criterion Met: Yes |
| **Outcome #8:**  Use trigonometry to solve problems involving right triangles. | Proctored assignment: Proctored Final Exam  Problem numbers:  10.2.23  10.6.3 | Results:  10.2.23: 72.22%  10.6.3: 55.56%  Average: 63.89%  Criterion Met: Yes |
| **Outcome #9:**  Calculate perimeter, area, surface area, and volume of various geometric objects. | Proctored assignment: Proctored Final Exam  Problem numbers:  10.4.13  10.5.9  10.5.59 | Results:  10.4.13: 44.44%  10.5.9: 44.44%  10.5.59: 33.33%  Average: 40.74%  Criterion Met: No |

**Notes: The successful completion rate for this class was terrible, with 8 student withdrawing and 12 students getting a grade of “F” for approximately a 35% success rate (which lowers to more like 25% when counting students who dropped as well). Many of the students that did not pass or complete the class also did not take the exams used to analyze these learning outcomes. It is good to know that students who are actually completing the class are mostly achieving the learning outcomes of the class. My main focus for this class, however, needs to be on helping student successfully complete the course. From statements to advisors and myself, I think part of the trouble might be the large workload required for students to complete both MATH 20 and MATH 120E. I am trying to find a way to give the students the information they need while also mitigating the amount of work involved. In the fall, I plan to try making online MATH 20 homework more flexible by having a “pretest” for basic math skills that will reduce the amount of work needed for the class.**

I have reviewed this report:

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Department Chair Dean

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Vice President of Academic Affairs and Student Services

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