**MATH 120 Fundamentals of College Mathematics**

**Section Number(s): 1009**

**Instructor: Daniel T. Murphree**

**Academic Year: 2020**

**Semester: Spring**

**# of Students: 20**

**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.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 Final Exam  Problem numbers:  11.1.9  11.4.11  11.7.55 | Results:  11.1.9: 36.84%  11.4.11: 78.95%  11.7.55: 57.89%  Average: 57.89%  Criterion Met: No | Average percentage: 65.20%  Criterion Met: Yes | 1. Results Analysis: On both of my MATH 120 classes this spring, this general education objective was met while only one of the two class level LO’s were met (the second one). CLO #1 was close both times but not quite there. The problem students struggled the most with from both classes was about conditional probability. The other one here was on the counting principle. The counting principle is fundamental to understanding and answering both probability and statistics problems, so this is particularly concerning.  2. Action Plan: From student comments on the course evaluation, I feel that I need to make my own videos for this class instead of just the recorded course lectures and the publisher videos that I already provide. It seems like students have not been using the captured lectures as a resource. The probability and number theory concepts can be difficult without enough demonstration. |
| **Outcome #2:**  Solve problems using basic set theory. | Proctored assignment: Proctored Midterm Exam  Problem numbers:  2.4.55  2.3.93  2.3.7  2.3.27 | Results:  2.4.55: 45%  2.3.93: 55%  2.3.7: 100% 2.3.27: 90%  Average: 72.5%  Criterion Met: Yes |
|  |  |  |  |  |  |
| 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 Midterm & Final Exams  Problem numbers:  2.1.25  3.2.7  3.6.19  3.5.23  9.1.21  11.2.68 | Results:  2.1.25: 85%  3.2.7: 95%  3.6.19: 55%  3.5.23: 60%  9.1.21: 84.21%  11.2.68: 15.79%  Average: 65.83%  Criterion Met: Yes | Average percentage: 65.83%  Criterion Met: Yes | 1. Results Analysis:  The problem that students struggled on was another counting problem Otherwise, I am rather happy with the results for this learning outcome.  2. Action Plan: As mentioned in the first section, I believe students will benefit from me making personal videos about counting problems specifically. |
|  |  |  |  |  |  |
| 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: 75%  8.4.7: 55%  8.5.29: 30%  8.6.1: 50%  Average: 52.5%  Criterion Met: No | Average percentage: 61.5%  Criterion Met: No | 1. Results Analysis: While the general education outcome came close to being achieved here, it was mainly because of the high achievement percentages in CLO’s 5 and 6. CLO 5 is about dimensional analysis and CLO 6 is analyzing statistical data. Both topics mainly require putting numbers into a correct formula and evaluating the result with little extrapolation on the student’s part. The lowest CLO was on evaluating geometric formulae, but the problems go beyond this and require students to use the formulae in creative ways to find what they need. The other lower CLO’s are almost all problems involving synthesis or creative use of the concepts with the exception of the CLO 4 which involves more difficult formulae.  2. Action Plan: While videos may help with this situation as well, I feel like having even more problems that require synthesis and creative use of the formulae would help here. For chapter 10 I had focused the homework on getting the students to have the formulae in their memories and easy to use, but it looks like I need to go back and recalibrate the homework and resources to focus on teaching them how to apply the formulae in different situations. |
| **Outcome #5:**  Solve problems using dimensional analysis | Proctored assignment: Proctored Final Exam  Problem numbers:  9.1.9  9.1.23 | Results:  9.1.9: 89.47%  9.1.23: 73.68%  Average: 81.58%  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: 84.21%  12.2.3: 94.74%  12.3.23: 68.42%  12.4.37: 84.21%  Average: 82.90%  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: 50%  3.7.11: 40%  Average: 45%  Criterion Met: No |
| **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: 84.21%  10.6.3: 42.11%  Average: 63.16%  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: 63.16%  10.5.9: 47.37%  10.5.59: 21.05%  Average: 43.86%  Criterion Met: No |

**Notes: All 20 students took the midterm and final. COVID-19 measures were implemented the week the midterm exam was due. Because of this the midterm exam had to be “copied” as well as possible into WebCampus for students that had not taken it before the campuses were closed, so some students took the exam on WebCampus and some on MyMathLab. There were not enough students who took the midterm on MyMathLab to make a meaningful comparison between the two platforms, but with how different the WebCampus interface is from MyMathLab and with all of the other outside stress at the time, I would not be surprised to find that scores were affected. For the final exam, I found out how to make the automatic proctoring work with MyMathLab, so the students were able to take the final exam on the platform they were more used to.**

I have reviewed this report:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department Chair Dean

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vice President of Academic Affairs and Student Services

Date\_\_\_\_\_\_\_\_\_\_\_­\_\_\_\_