Assessment: Course Four Column

Courses (MATH) - Math

MATH 095:Elementary Algebra

Course Outcomes	Assessment Measures	Results	Actions
Graphs - Graphs of linear equations, inequalities. **Course Outcome Status:** Active **Next Assessment:** 2016-2017 **Start Date:** 05/18/2012	**Exam -** Midterm 1 Problem # 17, 18, 19, 20, 22, 23 Final Exam Problem # 13, 19, 20 **Criterion:** NA	**Reporting Period:** 2016-2017 **Criterion Met:** N/A Midterm 1 79% taken Problem # 17: 66.7% 18: 33.3% 19: 60% 20: 40% 22: 13.3% 23: 53.3% Final Exam 57.9% taken Problem # 13: 45.5% 19: 81.8% 20: 100% (02/09/2018)	**Action:** The low problem from the final was about graphing using the intercepts. Most students actually got the correct line but did not graph using the x and y intercepts, indicating that they might have problems with the instructions or the vocabulary. I'm glad to see the percentage of students able to handle graphing by plotting points went up (this was 33.3% and 60% on the midterm but 81.8% on the final). I need to emphasize using intercepts more on the non-assessed assignments, especially the chapter summary for chapter 3. (02/09/2018)
Solve linear equations and inequalities - Solve linear equations and inequalities **Course Outcome Status:** Active **Next Assessment:** 2021-2022 **Start Date:** 10/25/2017	**Exam -** Midterm 1 Problem # 2, 3, 5, 6, 13, 14, 15 Final Exam Problem # 1, 2, 3, 4, 9, 10, 11 **Criterion:** NA	**Reporting Period:** 2016-2017 **Criterion Met:** N/A Midterm 1 79% taken Problem # 2: 26.7% 3: 86.7% 5: 20% 6: 60% 13: 40% 14: 13.3%	**Action:** I am glad to see that student results improved from the midterm to the final on almost all of these. Problem 9 on the final was on solving linear inequalities. I think this needs more emphasis on the non-assessed assignments to help students realize it is not that much different than an equation. (02/09/2018)

Course Outcomes	Assessment Measures	Results	Actions

15: 46.7%

Final Exam 57.9% taken
Problem #
1: 72.7%
2: 81.8%
3: 90.9%
4: 81.8%
9: 36.4%
10: 81.8%
11: 72.7% (02/09/2018)

| **Determine and analyze the slopes of lines -** Determine and analyze the slopes of lines
Course Outcome Status: Active
Next Assessment: 2021-2022
Start Date: 10/25/2017 | **Exam -** Midterm 1
Problem # 24, 25, 26, 27, 28

Final Exam
Problem # 14, 15, 16, 17, 21
Criterion: NA | **Reporting Period:** 2016-2017
Criterion Met: N/A
Midterm 1 79% taken
Problem #
24: 40%
25: 26.7%
26: 46.7%
27: 60%
28: 20%

Final Exam 57.9% taken
Problem #
14: 36.4%
15: 45.5%
16: 54.5%
17: 45.5%
21: 54.5% (02/09/2018) | **Action:** As with last semester, students struggled with slope. The most common mistake I saw this semester was students getting the slope formula backwards giving them the wrong sign on the slope and leading to incorrect equations for their lines. I did not add more emphasis on slope for this semester because I was focusing on reducing the number of proctored assignments. I will add more focus on slope for next semester. (02/09/2018) |
| **Set up and solve a variety of applied problems using algebraic techniques -** Set up and solve a variety of applied problems using algebraic techniques
Course Outcome Status: Active
Next Assessment: 2021-2022
Start Date: 10/25/2017 | **Exam -** Midterm 1
Problem # 4, 7, 8, 11, 12

Midterm 2
Problem # 10, 11, 25

Final Exam
Problem # 5, 7, 12, 26, 32, 37
Criterion: NA | **Reporting Period:** 2016-2017
Criterion Met: N/A
Midterm 1
Problem #
4: 20%
7: 40%
8: 60%
11: 93.3%
12: 26.7%

Midterm 2 | **Action:** The students did well on word problems involving percentages, using formulas, and writing in scientific notation. Again, they were unable to use scientific notation in problems. None of the students were able to correctly set up and solve a problem using a quadratic model. I plan to create a video or guided solution to these types of problem |

Course Outcomes	Assessment Measures	Results	Actions
		Problem # 10: 72.7% 11: 27.2% 25: 9% Final Exam Problem # 5: 27.3% 7: 63.6% 12: 72.7% 26: 72.7% 32: 45.5% 37: 0% (02/09/2018)	for the students for next semester. (02/09/2018)
Add, subtract, multiply, divide, simplify, and factor polynomials - Add, subtract, multiply, divide, simplify, and factor polynomials **Course Outcome Status:** Active **Next Assessment:** 2021-2022 **Start Date:** 10/25/2017	**Exam -** Midterm 2 Problem # 4, 5, 6, 7, 8, 12, 13 Final Exam Problem # 23, 24, 27, 28 **Criterion:** NA	**Reporting Period:** 2016-2017 **Criterion Met:** N/A Midterm 2 57.9% taken Problem # 4: 54.5% 5: 54.5% 6: 72.7% 7: 63.6% 8: 63.6% 12: 27.2% 13: 27.2% Final Exam 57.9% taken Problem # 23: 72.7% 24: 81.8% 27: 45.5% 28: 90.9% (02/09/2018)	**Action:** The students this semester did much better with adding and subtracting polynomials, with the successful percentage raising from 54.5% on the midterm to 72.7% on the final. They were also successful with simple polynomial multiplication and division by a monomial, but struggled with long division. I did see some improvement on long division (from 27.2% to 45.5%) but I want much better mastery of the subject. I have already created a guided long division problem I plan to put with the section next semester. (02/09/2018)
Factor polynomials and solve equations by factoring - Factor polynomials and solve equations by factoring **Course Outcome Status:** Active **Next Assessment:** 2021-2022 **Start Date:** 10/25/2017	**Exam -** Midterm 2 Problem # 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 Final Exam Problem # 29, 30, 31, 33, 34 **Criterion:** NA	**Reporting Period:** 2016-2017 **Criterion Met:** N/A Midterm 2 57.9% taken Problem # 14: 54.5% 15: 45.5% 16: 90.9% 17: 63.6%	**Action:** I'm very happy with the success rates on factoring polynomials. The students improved across the board from last semester, and on most specific types of problems between the midterm and the final. The low success problem on

Course Outcomes	Assessment Measures	Results	Actions
		18: 63.6% 19: 45.5% 20: 45.5% 21: 72.7% 22: 45.5% 23: 81.8% 24: 54.5% Final Exam 57.9% taken Problem # 29: 81.8% 30: 54.5% 31: 63.6% 33: 81.8% 34: 72.7% (02/09/2018)	the final was on factoring out the GCF before factoring a polynomial of the form x^2+bx+c . I think the improvement between semester here was the added time between the assignments and the assessment. Last semester students were finishing the assignments on the same day the assessment was due. (02/09/2018)
Solve quadratic equations using other quadratic methods - Solve quadratic equations using other quadratic methods **Course Outcome Status:** Active **Next Assessment:** 2021-2022 **Start Date:** 10/25/2017	**Exam -** Final Exam Problem # 38, 39, 40 **Criterion:** NA	**Reporting Period:** 2016-2017 **Criterion Met:** N/A Final Exam 57.9% taken Problem # 38: 45.5% 39: 36.3% 40: 0% (02/09/2018)	**Action:** Again, the last chapter saw students struggling the most. Students especially had trouble solving problems that lead to quadratic equations with 0% success rate on the final problem. With the restrictions of the online environment, I'm unsure where the problem is occurring. Possibly the students are simply not getting to the correct quadratic which causes them to get the wrong answer? Or is the problem with the quadratic formula? One thing that might have contributed here is that this was the only chapter that was not represented on a midterm. The students used the midterms for review (along with the chapter summary tests) and so might have thought this chapter was less important. I think next semester I will create a specific review for the final to help students better see what is

important. (02/09/2018)

Follow-Up: As with last semester, there were a large number of students who did not complete the course. Only 11 students took the final exam and second midterm out of the 26 original students meaning 58% did not finish. I did have trouble staying in as close communication with students this semester than I usually do and was only able to email students approximately once a week. I want to try increasing communication to see if that improves completion. (02/09/2018)