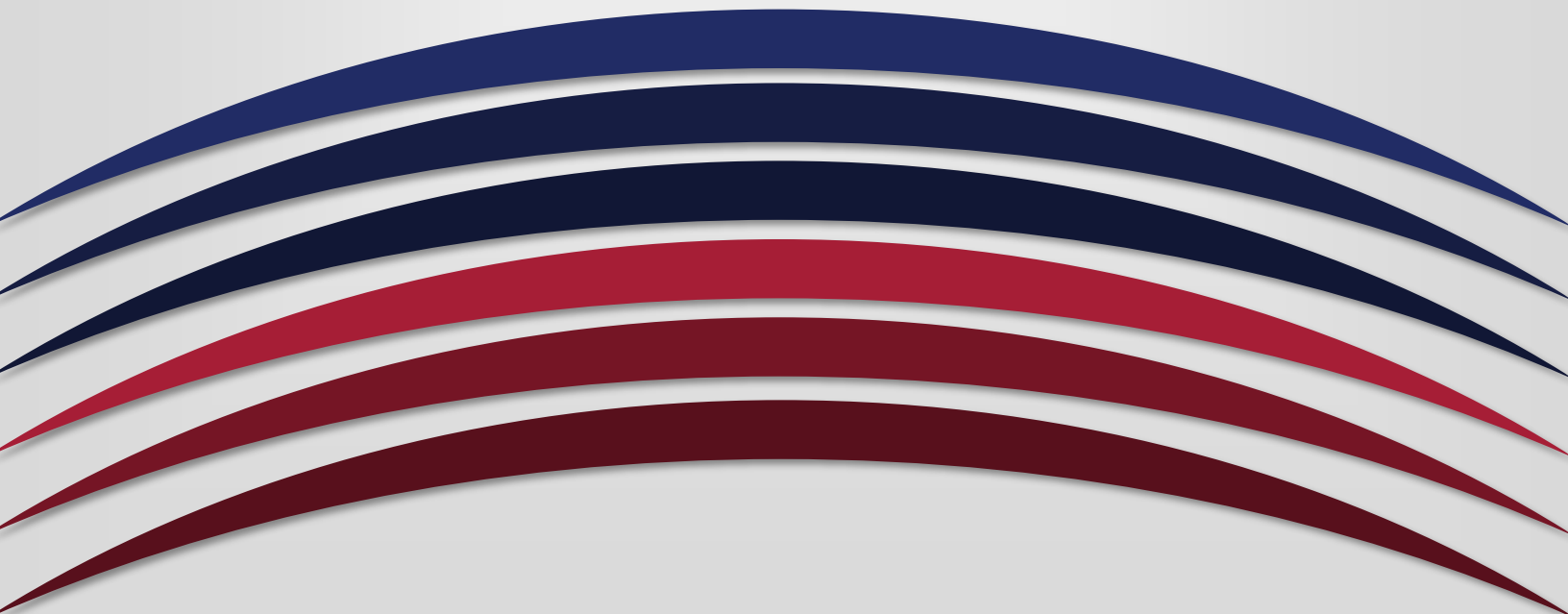# UNIVERSITY OF ARKANSAS
PULASKI TECH

Course-Level Assessment Report
Course: EDUC 2340
Math for Teachers II
Academic Year: 2020-21

1. Name of course: _EDUC 2340 Math for Teachers II_____

2. Name of individual(s) compiling report: _Lana Riding_____

3. Date of submission: _September 24, 2021_____

4. Academic year: __2021-21_____

Course-Level Learning Outcomes

1. What are the Course-Level Outcomes (CLOs)?

CLO #1. Apply Polya's problem-solving process and strategies; Build new mathematical knowledge through solving problems and in context.

CLO #2. Apply and adapt a variety of appropriate strategies to solve problems.

CLO #3. Develop geometric concepts by recognizing, analyzing, measuring, and reasoning about two and three-dimensional shapes.

CLO #4. Formulate and solve problems that involve collecting and analyzing data.

CLO #5. Apply technology whenever appropriate.

CLO #6. Create and use representations to organize, record, and communicate mathematical ideas.

CLO #7. Communicate mathematical thinking coherently and clearly.

CLO #8. Explore basic concepts of probability.

CLO #9. Apply the use of patterns and symbolic notation to introduce algebraic relationships.

2. Which CLOs were addressed for the academic year?

All CLOs were addressed.

3. Which CLOs are being addressed in your assessment plan in the upcoming academic year?

All CLOs will again be addressed in the upcoming year.

4. Explain the assessment cycle.

There is an annual assessment of this course, typically using the spring semester cohort, as this course is no longer offered in the fall semester. However, for the academic year 2020-21, the spring semester offering was cancelled due to low enrollment. It was offered during the second summer session, and for that reason this assessment report has been compiled using the data collected from the 5-Week Summer 2 cohort. The assessment cycle allows for all CLOs to be assessed annually.

5. What are the assessment methods? Are they direct or indirect?

The assessment methods are direct. The assessment report is written using data compiled and analyzed from the comprehensive final exam, administered through Cengage WebAssign. Each CLO is mapped to, on average, five questions from the final exam.

6. What are the assessment goal(s), including benchmarks?

To ensure mastery within the course, our goal is a 75% threshold for each course learning outcome.

7. What were the findings for the academic year?

CLO #1. Apply Polya's problem-solving process and strategies; Build new mathematical knowledge through solving problems and in context.
84.4%; goal met

CLO #2. Apply and adapt a variety of appropriate strategies to solve problems.
87.5%; goal met

CLO #3. Develop geometric concepts by recognizing, analyzing, measuring, and reasoning about two and three-dimensional shapes.
92.4%; goal met

CLO #4. Formulate and solve problems that involve collecting and analyzing data.
67.5%; goal not met

CLO #5. Apply technology whenever appropriate.
79.2%; goal met

CLO #6. Create and use representations to organize, record, and communicate mathematical ideas.
91.7%; goal met

CLO #7. Communicate mathematical thinking coherently and clearly.
81.3%; goal met

CLO #8. Explore basic concepts of probability.
79.2%; goal met

CLO #9. Apply the use of patterns and symbolic notation to introduce algebraic relationships.
77.5%; goal met

8. What is your analysis of the findings?

Overall, the students performed well on the assessment for most of the Course Learning Outcomes. Only one CLO was below our goal of 75%. Problem solving (CLOs # 1 and #2) is always a difficult skill for students to master. We saw an improvement in both of the outcomes over the 2019-20 academic year's results. More time was allowed during class sessions for students to explore hands-on problems solving, as well as having additional practice outside of class. Students are more comfortable being told how to solve each type problem, and resist and even resent having to be the problem-solver themselves. The hybrid format of the summer session, which included a four-hour class session once a week, seemed to benefit students by providing focused time on problem solving, which helped them become proficient. Developing an algebraic understanding of patterns and relationships (CLO # 9) is also a challenging skill for our students to master, and we saw a significant increase in performance over the previous year.

CLO #4 relates to the concepts of statistics, data collection and analysis. CLO 4, at 67.5%, was the one outcome in which we did not meet the goal. This outcome decreased from the previous year's result, which was 73.8% (below, but very close to the threshold). Possibly by focusing more on problem solving, too little time was allotted for statistics and probability.

Please see the table below to compare the results with the previous year.

	Spring 2020	Summer 2, 2021	Change
CLO 1	65.5%	84.4%	+18.9%
CLO 2	65.5%	87.5%	+22.0%
CLO 3	77.8%	92.4%	+14.6%
CLO 4	73.8%	67.5%	-6.3%
CLO 5	85.7%	79.2%	+6.5%
CLO 6	91.1%	91.7%	+0.6%
CLO 7	78.6%	81.25%	+2.65%
CLO 8	64.3%	79.2%	+14.9%
CLO 9	59.3%	77.5%	+18.2%
Total students	9	8	

It is important to remember the context of the results from Spring 2020. While we are pleased to see so many gains, especially double digit gains, from one year to the next, we are aware that Spring 2020 was an unusual semester. Spring 2020 will forever be remembered as the beginning of COVID-19. The week before Spring Break our course pivoted to online instruction only, and the second half of the semester was unlike any we could have imagined when we began in January. It was not surprising that the results from 2019-20 were lower than normal, and that we would experience growth this year. The results also seem to show that a 5-week, hybrid offering with an extended class session (4 hours) one day a week can be very successful in helping students achieve mastery of the course learning outcomes.

9. What is the action plan for the upcoming academic year? Explain.

We will always strive for improvement in outcomes every year. We will pay close attention to CLO 4, which at 67.5%, was the one outcome in which we did not meet the goal. As noted above, this outcome decreased from the previous year's result, which was 73.8% (very close to the threshold). In our efforts to focus more on the problem solving, it is possible too little time was allotted for statistics and probability. During the current (2021-22) year, we will strive for improvement in statistics and probability skills, while maintaining proficiency in the students' problem solving skills, along with the other CLOs. There will be intentional planning to continue to provide additional practice in the areas of problem solving, statistics and probability.