

Course-Level Assessment Report Course: 1330 Technical Mathematics Academic Year: 2021-2022

Due to Chair/Program Director and Faculty Assessment Chair by September 1





| 1. Name of course: | 1330 Technical Mathematics | |
|--|----------------------------|--|
| 2. Name of individual(s) compiling report: | Mandy Hill | |
| 3. Date of submission: | <u>September 1, 2022</u> | |
| 4. Academic year: | 2021 - 2022 | |

Course-Level Learning Outcomes

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

Student Learning Outcomes:

SLO #1: Students will demonstrate the ability to understand and use the basic properties of arithmetic of signed numbers, fractions and decimals as well as the fundamental operations of algebra.

SLO #2: Students will demonstrate the ability to understand and use the properties of solving elementary algebraic equations, manipulating formulas, ratios and proportions, and translating words into algebraic symbols.

SLO #3: Students will demonstrate the ability to understand and use the basic principles of geometry including formulas for calculating area and volume of polygons.

SLO #4: Students will demonstrate the ability to understand and use the basic properties of right-angle trigonometry and basic oblique triangles.

SLO #5: Students will demonstrate the ability to understand and convert measures in the metric system and the English system.

2. Which CLOs were addressed for the academic year?

Student Learning Outcomes:

SLO #1: Students will demonstrate the ability to understand and use the basic properties of arithmetic of signed numbers, fractions and decimals as well as the fundamental operations of algebra.

SLO #2: Students will demonstrate the ability to understand and use the properties of solving elementary algebraic equations, manipulating formulas, ratios and proportions, and translating words into algebraic symbols.

SLO #5: Students will demonstrate the ability to understand and convert measures in the metric system and the English system.



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

Student Learning Outcomes:

SLO #1: Students will demonstrate the ability to understand and use the basic properties of arithmetic of signed numbers, fractions and decimals as well as the fundamental operations of algebra.

SLO #2: Students will demonstrate the ability to understand and use the properties of solving elementary algebraic equations, manipulating formulas, ratios and proportions, and translating words into algebraic symbols.

SLO #5: Students will demonstrate the ability to understand and convert measures in the metric system and the English system.

4. How does this report connect or map to program-level or institutional-level outcomes?

Institutional-level outcomes: $PL \cap #1$: Students will demonstrate the ability to use s

PLO #1: Students will demonstrate the ability to use symbolic, graphical, numerical and written representations of mathematical ideas.

This ties to SLO #2 students will need to use mathematic symbols and numerical representations to solve real world algebra problems.

PLO #2: Students will use mathematical reasoning and, when appropriate, a general problem solving process to solve problems. This ties to SLO #1, #2, and #5. Students will need to use mathematical reasoning to decide how to solve problems.

PLO #3: Students will learn mathematics through modeling real-world situations. This ties to SLO #3 converting measures involves solving real world problems.

PLO #4: Students will use appropriate technology to enhance their mathematical thinking and understanding, solve mathematical problems, and judge the reasonableness of their results. This ties to SLO #1 students will choose appropriate technology to work with the basic properties of arithmetic and SLO #2 students will choose appropriate technology to solve algebraic equations.

For each Course Level Outcome assessed this academic year, please complete the chart below, providing the assessment data for both fall and spring, and then a total for the academic year.

| Assessment Methods- How did | Students across all sections completed a common | |
|-------------------------------------|--|--|
| you assess student learning (define | comprehensive final exam. Questions were linked to | |

Return to Top of Document



| direct assessment methods used) in relation to the course level outcome being reported? <i>Note: If more than one assessment method was used, you may insert an additional row.</i> Were indirect assessment methods also used to assess students? If 'yes', please describe the method used. | specific course learning outcomes. Item analysis was performed to determine proficiency. | | |
|--|--|---|--|
| How do you define success for an individual student on the CLO assessment assignment or measure? | Student scores of 70% or above on each question and student scores of an average of 70% on the questions for that CLO. | | |
| How do you define success for the course level outcome? What is the benchmark for the Course Level Outcome? | 70% of students in the course achieve success on the CLO assessment assignment or measure. | | |
| How many students completed the assessment, and how many were successful? | <i>Fall</i> 61 Students 45 successful (74% success rate) | Spring 29 28 successful (97% success rate) | |
| Academic Year Total (add the numbers from Fall and Spring) | 90 students assessed 73 successful (81% success rate) | | |
| Was the benchmark/goal for this academic year met? | Yes | | |
| Were standardized rubrics, tests, or checklists used? | Yes | | |

5. What is your analysis of the findings?



We have revised the course to go over the first 7 chapters that cover SLO 1 Arithmetic, SLO 2 Algebra, and SLO 5 Measurement. The other two objectives: SLO 3 Geometry and SLO 4 Trigonometry were covered by the students completing an assignment that was specific to the students' trade. We have revised the course to go over the first 7 chapters that cover SLO 1 Arithmetic, SLO 2 Algebra, and SLO 5 Measurement. The other two objectives: SLO 3 Geometry and SLO 4 Trigonometry were covered by the students completing an assignment that was specific to the students' trade. We have revised the course to go over the first 7 chapters that cover SLO 1 Arithmetic, SLO 2 Algebra, and SLO 5 Measurement. The other two objectives: SLO 3 Geometry and SLO 4 Trigonometry were covered by the students completing an assignment that was specific to the students' trade. When comparing this year to last year, 2020 – 2021 had 87 students who took the assessment vs. 2021 – 2022 had 90 students who took the assessment, the success rate decreased by about 1%. That is not a remarkable increase. In the different SLO'S tested, SLO #1 – Arithmetic, had a decrease in success of 87% to 83%. SLO #2 - Algebra, had a decrease of success of 79% to 77%. SLO #5 – Measurement, had a decrease of success of 71% to 68%.

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

We will continue to test SLO 1, 2, and 5 by using the final. We will discuss how to begin recording student success on the other two SLO's – 3, 4. This will be difficult because students work on different problems based on their individual trade. We are also working with the technical departments to develop a relationship and pilot a class to teach technical math in the particular department the student is in.