Student Learning Outcomes (SLOs) Report for <u>Non-Accredited Programs</u>

(*updated 9/19/23*)

Program Type: **Non-Accredited Program**

Program Name: Mathematics

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Submission Date: 10/24/2024

Review Cycle:
- o   Even Year
- o   Odd Year

Review Round:

- o   **Round A** (Associate Dean review)
- o   **Round B** (Associate Dean + VPAA review)

All SLO reports are archived here: https://www.eiu.edu/assess/majorassessment.php

DUE: **October 15th** to your Associate Dean or designee

Each academic program is expected to prepare a Summary of the Assessment Data by Student Learning Outcome. This summary may take the form of a chart or other means of presentation that describes the annual data collected, when it is collected, in which course(s), through which assignment or activity, and by whom. This summary should clearly indicate what the program seeks to discover in its students' learning. The summary should correspond to the record-keeping documents maintained by the academic program.

Program Name:

PART 1. OVERVIEW OF STUDENT LEARNING OUTCOMES AND MEASURES

Student Learning Outcome (SLO)	What **measures and instruments** are you using? This could be an oral or written exam, a regularly assigned paper, a portfolio—administered early and later in coursework.	How are you using this info to improve student learning? What are you hoping to learn from your data? Include **target score(s) and results**, and specify whether these were met, not met, or partially met for each instrument.	Does your SLO correspond to an **undergraduate learning goal (ULG)**: writing, speaking, quantitative reasoning, critical thinking, responsible citizenship?
Students will demonstrate knowledge of core mathematical content in differential and integral Calculus and its applications	Course grades from MAT 2443 – Calculus and Analytic Geometry III; MAT 3501 – Differential Equations I	This data are collected by the course faculty and the department chair. Course grade data are shared informally among course instructors and the department chair. Students who earn a "C" or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward. MAT 2443 Fall 2022 – Spring 2024 31 of 36 students met or exceeded expectations MAT 3501 Fall 2022 – Spring 2024 21 of 26 students met or exceeded expectations	CT-4, 5, 6 QR-1, 2, 3, 4, 5, 6

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Students will demonstrate knowledge of core mathematical content in algebraic structures	Course grades from MAT 3530 – Abstract Algebra MAT 4760 – Linear Algebra	This data are collected by the course faculty and the department chair. Course grade data are shared informally among course instructors and the department chair. Students who earn a "C" or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward. MAT 3530 Fall 2022 – Spring 2024 23 of 23 students met or exceeded expectations MAT 4760 Fall 2022 – Spring 2024 2 of 2 students met or exceeded expectations	CT-4, 5, 6 QR-1, 2, 3, 4, 5, 6
Students will be able to communicate about reasoning and proof in both oral and written forms	Course grades from MAT 2800 – Foundations of Mathematics MAT 4860 – Mathematical Analysis	This data are collected by the course faculty and the department chair. Course grade data are shared informally among course instructors and the department chair. Students who earn a "C" or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward. MAT 2800 Fall 2022 – Spring 2024 18 of 18 students met or exceeded expectations MAT 4860 Fall 2022 – Spring 2024 3 of 4 students met or exceeded expectations	WCR – 1, 2, 3, 4 SL – 3, 7
Students will demonstrate critical thinking skills	Presentations in MAT 4700	Students are required to write and present mathematical ideas. A rubric is used to assess at a presentation of this work. MAT 4700 Spring 2024	CT – 1, 2, 3, 4, 5, 6 RC-4

One Student had a Basic rating in all categories and two students achieved an Advanced rating in all categories.

PART 2. IMPROVEMENTS AND CHANGES BASED ON ASSESSMENT

A. Provide a short summary (1-2 paragraphs) or bulleted list of any **curricular actions** (revisions or additions) that were approved over the past two years as a result of reflecting on the student learning outcomes data. Are there any additional future changes, revisions, or interventions proposed or still pending?

An introductory course in computer science, CSM 1000, was added as an option for Mathematics students. It is a new introductory course in computer science that serves several purposes. One purpose is to provide a successful first experience in computer science for those students who are under prepared for CSM 2170 – Computer Science I. Another related purpose is to provide a stronger foundation in computer science for those students who need or desire it.

We added the requirement of a grade of 'C' or better for prerequisites in the Mathematics major. For example, the MAT 1441 prerequisite to MAT 2550 was updated. Due to the cumulative nature of many mathematics classes, this will help ensure students are prepared for classes in a sequence.

B. Provide a brief description or bulleted list of **any improvements (or declines)** observed/measured in student learning. Be sure to mention any intervention made that has not yet resulted in student improvement (if applicable).

Measurements remain high, but small sample sizes effect the ability to draw conclusions in some cases.

The high level of success in MAT 2800 is a strong indicator. This course is usually a first introduction to abstract ideas in mathematics and is a transition from mathematical as a computational and applied field to mathematics as also a theoretical field.

C. HISTORY OF DATA REVIEW OVER THE PAST TWO YEARS

Please document annual faculty and committee engagement with the assessment process (such as the review of outcomes data, revisions/updates to assessment plan, and reaffirmation of SLOs).

Date of annual (or periodic) review	Individuals or groups who reviewed the assessment plan	Results of the review (i.e., reference proposed changes from any revised SLOs or from point 2.A. curricular actions)
Fall 2023	Department Chair Department as a whole at a department meeting	
Fall 2024	Department Chair Department as a whole at a department meeting	

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Dean Review and Feedback

The BA in Mathematics 2-year assessment plan draws from multiple data points to measure four student learning objectives that are each tied to the EIU undergraduate learning goals. Course grades were used from multiple required courses including MAT 2443, 2800, 3501, 3530, 4760, and 4860, along with a critical thinking rubric used in assessing presentations in MAT 4700. Assessment data were shared with the department at faculty meetings in fall 2023 & 2024 and led in part to the addition of CSM 1000 as an option for MAT students and also to strengthening prerequisites within the Mathematics major. The department noted that a high level of student success in MAT 2800 is a good indicator that students are grasping abstract ideas in the discipline. Also noted was that while measurements remain high, small sample sizes remain an issue in determining achievement of SLO benchmarks. In my opinion, the current plan places too much emphasis on student course grades, though I commend the department's use of a critical thinking rubric in MAT 4700. While student course grades have their place in assessment, I encourage the department to consider other standardized methods to assess student learning to further diversify their assessment enterprise.

<u>11/26/24</u>

Dean or Designee   **Date**