UNIVERSITY OF DETROIT MERCY
Build A Boundless Future

Core Curriculum Outcomes Assessment Summary Form

This form is to be completed by a representative from the Core Curriculum Assessment Sub-Committee. The information provided in this form will be used by University of Detroit Mercy to inform stakeholder groups about Detroit Mercy's commitment to the intellectual, spiritual, moral and social development of all undergraduate students as they navigate through the Core Curriculum. A PDF version of this completed form will be posted to the Academic Affairs Assessment website.

1. CORE OUTCOMES INFORMATION

   Core Curriculum Area *

   ⦿ Knowledge Area

   ◯ Integrating Theme

2. Enter the Knowledge Area or Integrating Theme of the Outcomes Assessed: For example, KA-A1. Oral Communication or Integrating Theme 1 - Reading, Writing, & Research Across The University *

B1 Quantitative and Symbolic Reasoning

3. Form Completion Date: *

5/13/2021	📅

4. Assessment Overview

Briefly share how the outcome identified above was assessed. Include semester and year, how student artifacts were collected, who performed the assessment, and what assessment tool was used. *

The core curriculum knowledge area: B1 Quantitative and Symbolic Reasoning includes recognition, conversion, interpretation, hypothesis, communication, and application of mathematical (e.g. polynomial, rational, radical, exponential, and logarithmic) models to solve arithmetic, algebraic, geometric, and statistical problems. In January of 2021 student artifacts were solicited from eleven full-time and adjunct faculty who taught core approved courses in the fall 2020 semester (MTH 1010/1020/1030/1040, MTH 1110, MTH 1120, MTH 1400, MTH 1410, MTH 1420). Eight faculty members submitted the requested randomly selected artifacts: three from each of their course sections, resulting in 51 total student artifacts. Due to COVID-19, some student artifacts were not in a format suitable for submission. On February 2, 2021, faculty attended a norming and scoring session for inter-rater reliability using the Core Curriculum Student Learning Outcomes Rubric for Quantitative and Symbolic Reasoning. Faculty were paired up to assess a set of student artifacts and record the rubric scores in the B1 Quantitative and Symbolic Reasoning Excel Scoring Sheet. On March 2, 2021, faculty attended a follow-up meeting to review all of the recorded rubric dimension scores and identify student strengths and weaknesses. The rubric contains five-dimension areas that reflect the core outcomes for B1. A four-point rubric scale was used (4=capstone, 3 and 2 = milestone, 1=benchmark) that also included NA for not applicable and a zero for when no evidence was present. A score of 3.5 is expected for each dimension area, indicating students' progression from the upper milestone to the capstone level.

5. Results, Planned Actions, and/or Actions Taken

Briefly summarize the assessment results and how they are being used. Include a summary of faculty discourse captured during the norming session, the rubric score and scale, an interpretation of the score, and plans to enhance student learning. *

The complete set of randomly selected student artifacts (n=51) yielded rubric dimension scores ranging from 3.4 to 3.6, the upper milestone to capstone range. Student strengths (>3.5) were in "reasonableness of solution" (3.6), "mathematical models" (3.5), and "problem solving" (3.5). Student areas that could benefit from strengthening (<3.5) were "units of measure" (3.4) and "application of mathematical models" (3.4). Faculty noted that artifacts submitted for courses at or above MTH 1400 were less likely to include "units of measure" or "application of mathematical models", due to the curricular content assessed in these courses. These differences lead to a discussion regarding the rubric that was used to assess student artifacts. It was suggested that another rubric be used, preferably one that has a broader measure of students' quantitative abilities. On May 4, 2021, faculty met to revise the B1 rubric using the AAC&U Values Rubric for Quantitative Literacy. Suggestions for improving the artifact collection process included: inclusion of answer keys with submitted student artifacts, identification of parameters to ensure more consistency in artifacts, and consideration of a common problem for each course that could be used for core assessment. A second item of discussion focused on student needs and pedagogical practices to improve student learning. Faculty stated that undergraduate general education students need time with faculty outside of the classroom to better understand concepts. Best practices about faculty tutoring were discussed. Faculty stated that students' level of preparedness differs greatly among students in the same class. The facilitator suggested that time be set aside in department meetings for faculty to share their teaching strategies and pedagogical practices that lead to increased learning in various mathematics courses. Additional opportunities for enhancing pedagogical practice can be sought out by faculty through the newly developed Detroit Mercy Center for Excellence in Teaching & Learning.