Assessment Data Mathematical, Information and Computer Sciences
Computer Information Technology (ADC), 2023-24

Learning Outcome:

PLO: Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats (Quantitative Reasoning).

GELO 1e: Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

Outcome Measure:
2022-23 and beyond: Annual: Signature assignment on a database in CIT3054 (Database Design)

Before Fall 2022: Annual: Each student will participate in the ETS Proficiency Profile exam.

Criteria for Success:
2022-23 and beyond: 80% of the students should have an average score of at least 2.5 in each of the major areas.

Before Fall 2022: 70% of the students will be Marginal or Proficient at Level 2.

Longitudinal Data:

	Percent of Students at or Above 2.5	
	2022-23	2023-24
Recognition of Relevant Information	64%	47%
Correctness of Query	21%	16%

	Percentage of Students Marginal or Proficient				
	2017-18	2018-19	2019-20	2020-21	2021-22
ETS Proficiency Profile Level 2 Quantitative Reasoning	60%	39%	50%	55%	39%

Conclusions Drawn from Data: The students are not meeting our benchmark. The high degree of variability has led us to look at the skills which are being measured by the ETS

assessment tool. The skills being measured are similar to those that are developed in College Algebra. Because most of our students obtain their mathematics education before coming to PLNU, this does not seem like an accurate assessment of skills that the students are acquiring while at PLNU. This led us to identify a different way to assess student skills.

Changes to be Made Based on Data: The department concluded that the ETS exam is not a good measure of quantitative literacy for students in the field of information technology. We have designed a signature assignment and pilot tested it in the 2022-23 academic year. The questions were placed at the end of the final exam and some of the students didn't attempt them (3 of 23 didn't do either problem, 5 of the 23 students only did one problem), so we were left with incomplete data. In the 2023-24 year we moved the assessment questions to the top of the exam, expecting this to provide improvement from last year. However, the results fell further. Part of this was significantly lower-performing cohorts of students that were part of this assessment. Several students chose to not attempt the questions on the final and moved on to what they perceived to be easier questions on the exam. We will discuss ways to better prepare students for quantitative analysis and completing tasks such as these assessment questions.

Rubrics
ETS Proficiency Profile (no rubric involved).

Rubric for the signature assignment is on the following page.

Rubric Used

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Recognition of relevant information	3 errors (an error is defined as missing a relevant database field or listing an irrelevant field)	2 errors (an error is defined as missing a relevant database field or listing an irrelevant field)	1 error (an error is defined as missing a relevant database field or listing an irrelevant field)	All relevant database fields are listed and no irrelevant fields are listed for both queries
Query correctness	3 mistakes in the 2 queries	2 mistakes in the 2 queries	1 mistake in the 2 queries	No mistakes in the two queries