CPI _ Improving Program Learning Outcomes Report

CPI Improving PLO Report (AY22-23)
Name of the program_____MS. Mechanical Engineering_____
Dean' signiture_____
Expected Date of Submission 6/30/2023
Department Chair or Director: ___Dr. Xun Yu_____

NYIT's CPI process is implemented to meet *MSCHE Standard V: Educational Effectiveness Assessment: Assessment of student learning and achievement demonstrates that the institution's students have accomplished educational goals consistent with their program of study, degree level, the institution's mission, and appropriate expectations for institutions of higher education.*
All degree program's PLO assessment plan (2022-2025) are posted through the link:

http://www.nyit.edu/planning/academic_assessment_plans_reports.

This is a report of its implementation for year 2022-2023. The report should address the following points:

I. The Annual Program Learning Outcomes (PLOs) Assessment should include the followings.

1. PLO (Program Learning Outcomes) assessed. list the PLOs that have been assessed in AY 22-23 based on your three-year plan(AY22_25)

   Although the MS Mechanical Engineering program is not accredited by ABET, we use 6 of 7 ABET learning outcomes for the assessment Student Outcomes (SOs) for the MS Mechanical Engineering program:

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1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
6. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

2. METHOD: Describe the method of assessment and attach measurement instruments (e.g., rubric, exam items, scoring guide for a particular task, supervisor evaluation form, survey instrument, and other assessment tools).

    The assessment is based on Faculty Course Assessment Reports (FCARs) which are submitted by the faculty for each course they teach during the academic year. The FCAR requires:

    - The faculty member to identify course-specific learning outcomes (LO's) for his/her course and to establish appropriate performance tasks (APTs) with appropriate documentation to assess to what extent the Student Outcomes are being met. These APTs may be quizzes, exam questions, reports, projects, presentations, etc. Each student's APT is then scored with the method shown below (Table 1), to create an EGMU vector for that specific Student Outcome and a corresponding assessment metric.
    - Each faculty member must satisfy a minimum set of Student Outcomes (1 - 6) for his/her course as established by the department. This is accomplished by using a subset of the Appropriate Performance Tasks (APTs) to satisfy the COs. Here the faculty member is required to show what part of each task is being used to form a metric for the Student Outcomes (1 – 6) with appropriate

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documentation. To accomplish this task, the department formulated a set of criteria for each Student Outcome (1 – 6) that can be used as a guiding rubric to explain and help faculty evaluate what that outcome requires for an EGMU score of 3 (or "Excellent"). EGMU scores of 2, 1, and 0 represent partial satisfaction of the rubric.

The department has determined that the minimum level of quality that it felt was necessary in order to produce graduates that will ultimately achieve our Program Educational Objectives is **an EGMU score of 2.0 for each Student Outcome**. This score of 2.0 was chosen by the department because in the EGMU score of 2.0 indicates Good and therefore represents what a student would need in order to satisfy the requirements for graduation.

3. ANALYSIS of the assessment results: provide criteria based disaggregate and aggregate data analysis.

   We did the assessment of outcome #1 in the past year and the data is shown below:

Outcome #	E	G	M	U	Average
1: Engineering, science, math	34	11	16	8	2.03

4. INTERPRETATION: to what degree did students achieve the program learning outcomes based on your data analysis and expected learning outcomes?

   - Overall, the Student Outcomes score is good (generally above 2.0) in the assessed outcome.

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5. ClOSE THE LOOP – If the expected program learning outcomes were successfully met, describe how the program will keep or expand the good practices, if not, refine or create the next cycle of [PDSA](#)

II. Brief Description of Faculty Engagement in the Current Annual Assessment Report:

All faculty members are engaged in the annual assessment as all faculty members are required to submitted the FCARs for the courses they taught.

Last updated 4/14/23