

BS Chemical Engineering

Annual Program Report Template

Year:	2023 (submitted 5/31/2023)
Program:	BS Chemical Engineering
Contact Person (include email & phone#)	Tracy Benson

Summary of Continuous Improvement Efforts since Last Report

Provide a brief description of how assessment results have been used for program improvement. Point to a specific example of how an assessment provided the program with data it could use for improvement and what that improvement was, if possible, also show evidence of the improvement. You may look at data from the two previous academic years to support this case.

Respond here:

The department has made the following improvements.

- 1. Develop 3-hr Numerical Methods/Computer Simulation Course**
- 2. Create Career Development Courses**

1. Develop 3-hr Numerical Methods/Computer Simulation Course

Identification: Using input from our department's Advisory Council, students need better understanding of data analysis techniques.

Improvement: Replace the required linear algebra course with a numerical methods with computer simulations that use the basics of linear algebra. This new course will contain the level of linear algebra needed for solving systems of equations.

Result: No results at this time.

2. Create Career Development Courses

Identification: Using input from our department's advisory council, co-ops and internships can be emphasized if students were to receive credit towards their graduation.

Improvement: Three 1-hr career development courses will be developed, giving students the opportunity to earn college credit (i.e., counting towards graduation) via cooperative education and internships.

Result: No results at this time.

Program Highlights Since Last Report

Identify and briefly discuss any programmatic curriculum changes made since the last report (e.g. new courses, course changes, SLO changes, course deletions).

Respond here: Special topics courses, including Carbon Capture Utilization & Storage and Industrial Chemical Catalysis, are being developed for future offerings.

Table 1. Assessment Results and Analyses for Current Cycle.

STAGE 1: PLAN				STAGE 2: DO		STAGE 3: STUDY
Departmental Student Learning Goal	Program Student Learning Outcome	Assessment	Assessment Method/Location	Benchmark Expectations	Data Results	Actions/Goals Based on Data Results* What do the data tell you? How will you use this data? How were data from the last cycle used to make changes during this cycle, and What were the results of those changes?
An ability to recognize ethical responsibilities in engineering solutions and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Math and Engineering Formulation	Plant Design II	written report	>75 %	85.7 %	ok
Understands the impact of engineering solutions	Ethical and professional responsibilities	Plant Design II	written report	>75 %	85.7 %	ok
Understand the ethical implications of engineering license, conflict of interest, and moral obligations of an engineer	Societal	Plant Design II	exam	>75 %	95.1 %	ok

An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Recognize the need to learn	Plant Design II	Essay assignment	>75 %	64.3 % displayed an exemplary ability to describe the need for lifelong learning and 21.4 % displayed an accomplished ability to describe lifelong learning.	ok
Ability to prepare projects using up-to-date materials found outside of class	Data collection and analysis	Plant Design II	written report	>75 %	78.5 %	Met goals but on the low side. Student performance decreased compared to previous assessments. However, the assessment was based on project work and due to issues related to COVID-19, student performance on team projects, in general, was diminished. The score could be an anomaly. The indicator will be reassessed in one year. If performance is still under the 75% target, an additional action plan will be created.
Ability to apply critical thinking skills to open ended problems	Draw conclusios	Plant Design II	written report	>75 %	78.6 %	Met goals but on the low side. Will be address by Improvement Plan 2. Will continue to monitor and make improvements as necessary.

Table 2. Continuous Improvement Results Since Last Report

Stage 4: ACT		
Actions/Goals Based on Data Results <i>*Copy last cycle's actions/goals and report on progress toward continuous improvement on those here.</i>	Status <i>C=Complete</i> <i>P=Progressing</i> <i>N=No Action Taken</i>	Discussion of Status <i>If C, describe efforts that led to accomplishment of actions/goals.</i> <i>If P, provide update on progress made toward accomplishing actions/goals and what tasks remain</i> <i>If N, discuss why action toward accomplishing actions/goals has been delayed and what work will be initiated toward accomplishment.</i>
See program improvements in first section		