

SACS Assessment Plan for PhD Program – Chemical Engineering

Degree: PhD – Chemical Engineering 2023-2024 Assessment Plan		
	Student Learning Outcome #1	Students will demonstrate an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
PLAN	Assessment Method(s)	(1) Dissertation (2) Qualifying Exam
	Proficiency	Minimum acceptable is 3 out of 4
DO	Benchmark	75% of students achieve the proficiency mentioned above
	Results of Assessment	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
S T U D Y	Analysis of Results	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. The developed method will be used moving forward. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
ACT	Improvement Plan for 2024-2025	We have been and will continuously analyze the program to identify areas for improvement. As there are no student assessments, improvements for 2024-2025 will focus on increasing course offerings and modernization of current courses and challenging research projects that utilize advanced technologies and improve students' abilities to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. Additionally, please find additional actions in the "Overall Improvement Plan" Section

Degree: PhD – Chemical Engineering 2023-2024 Assessment Plan		
	Student Learning Outcome #2	Students will demonstrate an ability to develop and conduct appropriate experimentation or numerical simulation, analyze and interpret data, and use engineering judgment to draw conclusions and produce solutions appropriately.
PLAN	Assessment Method(s)	(1) Dissertation (2) Qualifying Exam
	Proficiency	Minimum acceptable is 3 out of 4
DO	Benchmark	75% of students achieve the proficiency mentioned above
	Results of Assessment	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
S T U D Y	Analysis of Results	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. The developed method will be used moving forward. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
ACT	Improvement Plan for 2024-2025	We have been and will continuously analyze the program to identify areas for improvement. As there are no student assessments, improvements for 2024-2025 will focus on increasing course offerings and providing unique and challenges research projects to effectively evaluate and improve students' abilities to develop and conduct appropriate experimentation or numerical simulation, analyze and interpret data, and use engineering judgment to draw conclusions and produce solutions appropriately. Additionally, please find additional actions in the "Overall Improvement Plan" Section

Degree: Doctor of Engineering (DE) – Chemical Engineering 2023-2024 Assessment Plan		
	Student Learning Outcome #3	Students will demonstrate an ability to use modern engineering tools to produce engineering analysis in a systematic manner.
PLAN	Assessment Method(s)	(1) Dissertation Report (2) Qualifying Exam
	Proficiency	Minimum acceptable is 3 out of 4
DO	Benchmark	75% of students achieve the proficiency mentioned above
	Results of Assessment	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
S T U D Y	Analysis of Results	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. The developed method will be used moving forward. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
ACT	Improvement Plan for 2024-2025	We have been and will continuously analyze the program to identify areas for improvement. As there are no student assessments, improvements for 2024-2025 will focus on increasing course offerings and modernization of current courses and challenging research projects that utilize advanced technologies and modern tools to expose students to cutting-edge methods to improve their ability to produce engineering analysis in a systematic manner. Additionally, please find additional actions in the “Overall Improvement Plan” Section.

Degree: Doctor of Engineering (DE) – Chemical Engineering 2023-2024 Assessment Plan		
	Student Learning Outcome #4	Students will demonstrate an ability to complete a doctoral dissertation and effectively communicate the dissertation work with a range of audiences.
PLAN	Assessment Method(s)	(1) Dissertation Report (2) Final Dissertation Defense
	Proficiency	Minimum acceptable is 3 out of 4
DO	Benchmark	75% of students achieve the proficiency mentioned above
	Results of Assessment	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
S T U D Y	Analysis of Results	There were no students that graduated with an PhD in Chemical Engineering during Spring 2024. Therefore, there were no assessment performed. The developed method will be used moving forward. This is artifact of decrease PhD enrollment during the COVID pandemic. We have seen an uptick in enrollment since and expect graduation numbers to increase accordingly.
ACT	Improvement Plan for 2024-2025	We have been and will continuously analyze the program to identify areas for improvement. As there are no student assessments, improvements for 2024-2025 will focus on increasing student opportunities to present internally and externally. Additionally, we will continue to ensure that effect communication (both oral and written) are a critical pillar to successful completion of a doctoral dissertation. Additionally, please find additional actions in the “Overall Improvement Plan” Section.

Overall Improvement Plan

Based on results from the general analysis for the program and the strong parallels that may be drawn between the coursework requirements and expectations of all graduate degrees offered by the department, we proposed the following improvement actions to be taken:

- Present general graduate program findings to department faculty to ensure that all courses internally (required or elective) promote and evaluate the student learning outcomes presented previously.
- Ensure efforts are made to clearly identify faculty and department expectations as to what is expected from graduate students to meet and exceed the SLOs for the program.
- Provide clear language in the syllabi of internal courses as to the student learning outcomes and expectations associated.
- Evaluate where in the internal curriculum that more open-ended projects requiring the skills presented in SLOs can be incorporated for maximum impact and coverage.
- Evaluate that classes taken externally to the department meet the demands of SLOs.
- Work with College of Engineering partners to ensure acceptable rigor related to SLOs.
- Ensure that all faculty are applying the necessary rigor and critical analysis for dissertations and oral presentations.