

Security and Resilience in the Chemical Energy Sectors, Undergraduate Certificate

Goal 1: Develop Certificate Courses Fully

Goal Description:

This goal refers to the process of completing design, editing, and review of all certificate offerings

Providing Department:

Security and Resilience in the Chemical Energy Sectors, Undergraduate Certificate

Progress: Ongoing

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Performance Objective Item for Goal 1

Performance Objective Description:

Develop certificate courses fully - finalize course material.

RELATED ITEM LEVEL 2

New KPI, Target, and Results Item for Goal 1: Develop Certificate Offerings Fully

KPI Description:

KPI 1 - all courses in the certificate will be fully developed

KPI 2 - course content will be assessed to ensure student performance can be adequately measured

KPI 3 - undergraduate director will oversee adjunct and full faculty familiarity with courses and best practices in delivery

Target Description:

KPI 1 - by Fall 2024 all PDL courses will be completed in 5 week design

KPI 2- in 2023/2024 course content will be assessed for appropriate exercises testing student achievement

KPI 3 - all faculty and adjuncts will review course content and submit any required changes to Master Copies of all courses within certificates

Results Description:

All courses in the certificate have been designed. In Fall 2023 formal assessment by the department necessitated changes in course design to include exercises - 3 critical thinking and 2 applied - as norm for student measure of content mastery. In Spring 2024 all courses in the certificate were augmented by said exercises. In Fall 2023 and Spring 2024 all faculty already teaching courses contained in the certificate provided editing, review, and reports of changes. Courses not yet taught have yet to be reviewed as adjunct faculty get assigned to teaching them.

RELATED ITEM LEVEL 3

Action for Goal 1: Develop Certificate Offerings Fully

Action Description:

In 2023/2024 all courses within the certificate were completed. Moreover, the Department faculty was engaged in thorough overhaul of the courses' assessment. Each course was enhanced by 3 additional critical thinking exercises and 2 applied exercises. There are few courses yet to be taught. For year 2024/2025 if those courses have full enrollment, faculty will be tasked with completing their reviews to ensure content excellence.

Goal 2: Recruit Students into Certificate

Goal Description:

This goal refers to all efforts aimed at enrolling students into the certificate

Providing Department:

Security and Resilience in the Chemical Energy Sectors, Undergraduate Certificate

Progress: Ongoing

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Performance Objective Item for Goal 2

Performance Objective Description:

Conduct recruitment efforts to increase enrollment in the Biosecurity & Pandemics undergraduate certificate.

RELATED ITEM LEVEL 2

New KPI, Target, and Results Item for Goal 2: Recruit Students into the Certificate

KPI Description:

KPI 1 - Recruitment efforts among incoming freshmen, in undergraduate classes, and in professional organizations

KPI 2 - Recruitment via conferences

KPI 3 - recruitment via UNIV 1101

Target Description:

KPI 1 - fliers and information sheets will be disseminated by Department administration and faculty at freshmen events, professional organizations, and undergraduate classes

KPI 2 - Faculty/staff will attend at least one conference where certificate will be promoted in vendor area; recruitment will double for 2023/2024

KPI 3 - Faculty teaching UNIV 1101 will promote the certificate in class

Results Description:

The new Undergraduate Program Director personally attended Bearkat week, Saturdays at Sam, new freshmen orientations, parent of freshmen orientation working with Luke Putnam on flyer distribution during all those events. Dr. Denham attended Texas Division of Emergency Management (TDEM) conference in May 2024 where the Department and Miss Carlson had set the vendor tent and advertised the certificate during presentation and during vendor exhibitions. Dr. Denham promoted the certificate during the annual conference of Emergency Management of Texas (EMAT) in March 2024 and at the Memorial Hermann Hospital System, Humble location in December 2023 and during LIFE at LEMIT in January 2024 and March 2024. Finally, Dr. Denham advertised the certificate in her Fall 2023 UNIV 1101 course. Other efforts consisted of Senior Director for Strategy and Innovation efforts at COCJ to promote the certificate. Overall, the recruitment in the certificate incresed from 1 student in Fall 2023 to 3 in Fall 2024.

Attached Files

 [Department of Security Studies enrollment 2 Assessment Cycle 2023-2024.xlsx](#)

RELATED ITEM LEVEL 3

Action for Goal 2: Recruit Students into the Certificate

Action Description:

One significant progress has been the establishment of the position of the Undergraduate Program Director and consistent and sustainable recruitment efforts on part of the Director, Department and COCJ staff. The Department will focus 2024/2025 efforts on continuing working with Senior Director for Strategy and Innovation in seeking strategies for recruiting. We will plan increase the enrollment in the certificate by 50% in 2024/2025.

Goal 3: Provide Strong Knowledge Base

Goal Description:

This goal is related to students' ability to demonstrate key knowledge

Providing Department:

Security and Resilience in the Chemical Energy Sectors, Undergraduate Certificate

Progress: Ongoing

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Learning Objective 1 for Goal 3: Provide Strong Knowldge Base

Learning Objective Description:

The Undergraduate Certificate in Security and Resilience in the Chemical and Energy Sectors is designed to educate students working in, or seeking careers in, areas relating to security and resilience of infrastructures in the chemical and energy sectors.

RELATED ITEM LEVEL 2

ICF for Learning Objective One for Goal 3: Provide Strong Knowldge Base

Indicator Description:

This indicator will be scores on applied exercises and critical thinking exercises across all courses in the certificate in Security and Resilience in the Chemical and Energy Sectors measuring knowledge in areas relating to security and resilience of infrastructures in the chemical and energy sectors.

Criterion Description:

70% average class scores in all critical thinking exercises and 70% average class scores in all applied exercises in all certificate courses

Findings Description:

The Department could not receive diagnostics for Spring 2024 and no data to assess this item were thus available.

RELATED ITEM LEVEL 3

Action for Goal 3: Provide Strong Knowledge Base

Action Description:

Knowledge checks moving students between units and their successful completion indicate some learning objectives are being met. However, the Department had difficulty obtaining scores and diagnostics for exercises in PDL courses and will focus its attention on streamlining access for 2024/2025 in order to have a better assessment of their applied skills and critical thinking skills.

RELATED ITEM LEVEL 1

Learning Objective 2 for Goal 3: Provide Strong Knowledge Base

Learning Objective Description:

Students will learn the language, frameworks, and vulnerabilities associated with Security and Resilience in the Chemical and Energy Sectors.

RELATED ITEM LEVEL 2

ICF for Learning Objective Two for Goal 3: Provide Strong Knowledge Base

Indicator Description:

Students who complete this program will be able to:

- Summarize key concepts in risk evaluation
- Sketch interdependences within the chemical and energy sectors
- Interpret the role of planning and liaison in crisis management
- Recognize a range of cyber vulnerabilities impacting critical infrastructures
- Integrate vulnerabilities, features, and stakeholders pertaining to the maintenance of resilience in the chemical and energy sectors

Knowledge checks will be completed in blackboard associated with each of the above-mentioned learning objectives.

Criterion Description:

80% of students will pass the knowledge check with a score of 70% or higher.

Findings Description:

80% of students passed the knowledge check with a score of 70% or higher

RELATED ITEM LEVEL 3

Action for Goal 3: Provide Strong Knowledge Base

Action Description:

Knowledge checks moving students between units and their successful completion indicate some learning objectives are being met. However, the Department had difficulty obtaining scores and diagnostics for exercises in PDL courses and will focus its attention on streamlining access for 2024/2025 in order to have a better assessment of their applied skills and critical thinking skills.

New Update to Previous Cycle's Plan for Continuous Improvement Item

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Closing Summary

Targeted emails will continue to be sent to students who have completed at least one of the required courses for the Security & Resilience in Chemical Energy Sectors certificate encouraging their enrollment in the certificate program. Emails will be sent and tracked through EMMA, with follow-up enrollment reports run to capture any new student enrollment.

Multiple Learning Objectives and indicators will also be identified to incorporate in the 2023-2024 assessment plan.

Update of Progress to the Previous Cycle's PCI:

Targeted emails were sent to students who completed at least one of the required courses for the Security & Resilience in the Chemical Energy Sector certificate encouraging their enrollment in the certificate program. Emails were sent and tracked through EMMA, with follow-up enrollment reports run to capture any new student enrollment.

We identified Learning Objectives and indicators and students met knowledge check

New Plan for Continuous Improvement Item

Closing Summary:

The Department will work with the Senior Director for Strategy and Innovation as well as with Institute for Homeland Security to find ways to recruit students into the certificate. The Undergraduate Program Director will continue marketing efforts through agencies, conferences, freshmen events, courses, and other venues. As more students enroll, we will be able to monitor their progress on objectives. We will also ensure that courses not yet taught will be diligently assessed by faculty teaching them for the first time and we will streamline methods to receive exercises results/score data at the Department after each class session.