



**REFINING AND
CHEMICAL
PROCESSES**



Energy Career Cluster

The Energy Career Cluster prepares individuals for careers in the designing, planning, maintaining, generating, transmission, and distribution of traditional and alternative energy.

Refining and Chemical Processes Statewide Program of Study



The Refining and Chemical Processes program of study helps CTE learners discover how to monitor, adjust, and control different equipment housed in petrochemical plants and refineries. It introduces students to the computer technology and instrumentation used to operate a variety of equipment systems and industrial processes, helping students build the skills needed to operate these systems.

Secondary Courses for High School Credit

Level 1

Level 2

Level 3

- Math for PTECH
- Humanities for PTECH
- Introduction to Process Technology
- Speech for PTECH

Level 4

- Principles of Quality PTEC
- English for PTECH
- Technical Writing for PTECH
- Government for PTECH

Postsecondary Opportunities

Associates Degrees

- Process Technology
- Process Operating Technology
- Logistics, Material, and Supply Chain Management
- Petroleum Technology/ Technician

Bachelor's Degrees

- Business Administration and Management, General
- Business/Commerce, General
- Industrial Engineering
- Petroleum Engineering

Master's, Doctoral, and Professional Degrees

- Business Administration and Management, General
- Business/Commerce, General
- Industrial Engineering
- Petroleum Engineering

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Tour a power plant or refinery

Work-Based Learning Activities

- Attend student summer conferences

Industry-Based Certifications

- NCCER Instrumentation Level I

- ISA Certified Control Systems Technician*
- OSHA 30 Hour General*

*IBC Sunsetting 8/31/24



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Gas Plant Operators	\$62,650	312	9%
Petroleum Pump System Operators, Refinery Operators, and Gaugers	\$71,488	1,181	9%
Power Plant Operators	\$71,635	309	9%

Successful completion of the Refining and Chemical Processes program of study will fulfill requirements of the Business and Industry endorsement or STEM endorsement if the math and science requirements are met.. Revised – August 2022

Refining and Chemical Processes

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE
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Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE
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Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE
5903 Math for PTEC	12701410 (.5 credit)	None	Fall Junior Year
5905 Humanities for PTEC	03221600 (.5 credit)	None	Fall Junior Year
5802 Introduction to Process Technology	13040502 (1 credit)	None	Spring Junior Year
5901 Speech for PTEC	03240900 (1 credit)	None	Spring Junior Year

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	GRADE
5807 Principles of Quality PTEC	13040504 (1 credit)	Intro to Process Technology	Fall Senior Year
5808 English for PTEC	03220400 (.5 credit)	None	Fall Senior Year
5809 Technical Writing for PTEC	03220400 (.5 credit)	English for PTECH	Spring Senior Year
5810 Government for PTEC	03330100 (.5 credit)	None	Spring Senior Year