



**Level 1**

---

Introduction to Process Technology  
Introduction to Instrumentation and Electrical

**Level 2**

---

Petrochemical Safety, Health, and Environment  
Advanced Instrument and Electrical (TBD)

**Level 3**

---

Project-Based Research  
Applied Mathematics for Technical Professionals  
Practicum in Energy (TBD)

**Level 4**

---

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
MSSC Certified Production Technician (CPT)	Process Technology Certificate Level II	Process Technology	Business Administration and Management, General	Business Administration and Management, General
	Petroleum Energy Technology Certificate	Process Operating Technology	Business/Commerce, General	Business/Commerce, General
	Qualification of Ultrasonic Testing Examiners (Sizing)	Logistics, Material, and Supply Chain Management	Industrial Engineering	Industrial Engineering
	Certified Plant Supervisor	Petroleum Technology/Technician	Petroleum Engineering	Petroleum Engineering

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%

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

**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.**

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
<b>Exploration Activities:</b>	<b>Work Based Learning Activities:</b>
Tour a power plant or refinery	Explore student summer conferences.



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

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 - July 2020



# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Foundations of Energy	13040503 (1 credit)	None	9-12
Introduction to Process Technology	13040502 (1 credit)	None	11-12
Introduction to Instrumentation and Electrical	N1303900 (1 credit)	None	10-12
Petrochemical Safety, Health, and Environment	N1300264 (1 credit)	None	11-12
Advanced Instrumentation and Electrical	TBD	TBD	TBD
Project-Based Research	12701500 (1 credit)	None	11-12
Applied Mathematics for Technical Professionals	12701410 (1 credit)	None	11-12
Practicum in Energy	TBD	TBD	TBD

FOR ADDITIONAL INFORMATION ON THE ENERGY CAREER CLUSTER, PLEASE CONTACT:  
 Laura Torres | [Laura.Torres@tea.texas.gov](mailto:Laura.Torres@tea.texas.gov)  
<https://tea.texas.gov/cte>