AGRICULTURE, FOOD, AND NATURAL RESOURCES

Applied Agricultural Engineering

Career & Technical Education

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Principles of Agriculture, Food, and Natural Resources (1)	Agricultural Mechanics and Metal Technologies (1)	Agricultural Structures Design and Fabrication (1)	Practicum in Ag - Agricultural Mechanics (2)

The Applied Agricultural Engineering program of study explores the occupations and educational opportunities associated with applying knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing agricultural products. This program of study may also include exploration into diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

Certifications / Degrees

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
AWS Welding	Certified Professional Agronomist	Heavy Equipment Maintenance Technology/ Technician	Agricultural Engineering	Agricultural Engineering
	Certified Reliability Engineer	Agricultural Mechanization, General	Agricultural Mechanization, General	Agricultural Mechanization, General
	Certified Irrigation Designer	Small Engine Mechanics and Repair Technology/ Technician		
	Fluid Power Mobile Hydraulic Mechanic	Welding Technology/ Welder		

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.

Work Based Learning and Expanded Learning Opportunities

Exploration Activities:	Work Based Learning Activities:
Texas FFA	Earn a welding certification FFA Supervised Agriculture Experience (SAE)

Occupation Outlook

Occupations	Median Wage	Annual Openings	% Growth
Outdoor Power Equipment and Other Small Engine Mechanics	$32,406	366	16%
Welders	$41,350	6,171	9%
Farm Equipment Mechanics and Service Technicians	$39,915	304	17%
Mobile Heavy Equipment Mechanics	$47,299	1,627	16%
Agricultural Engineers	$64,792	9	13%

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

Successful completion of the Applied Agricultural Engineering program of study will fulfill requirements of a Business and Industry endorsement or STEM endorsement if the math and science requirements are met. Revised - July 2020

FOR ADDITIONAL INFORMATION ON THE AGRICULTURE, FOOD, AND NATURAL RESOURCE CAREER CLUSTER, PLEASE CONTACT:

Vincent Hernandez | CTE Specialist | Samuel.Hernandez@allenisd.org

https://tea.texas.gov/cte

Texas Education Agency