



Applied Agricultural Engineering-Welding

(Agricultural Technology and Mechanical Systems)

BUSINESS & INDUSTRY ENDORSEMENT

SHS and WHS

2024-25

Grade	CTE Required Courses	Language Arts	Math	Science	Social Studies	Required State Electives
9th	Principles of Agriculture, Food, and Natural Resources (1)	English I	Algebra I	Biology		Fine Arts (1) Health (.5) Languages Other Than English (LOTE) or Computer Science PE (1 or substitute credit)
10th	Agricultural Mechanics and Metal Technologies (1)	English II	Geometry	IPC or Chemistry	World Geography or World History	
11th	Agricultural Structures Design and Fabrication/Lab (2)	English III	Algebra II	Physics or Chemistry	U.S. History	
12th	Practicum in Agriculture, Food and Natural Resources (2) OR Practicum in Agriculture, Food and Natural Resources/Extended Practicum in Agriculture, Food and Natural Resources (3)	English IV or Business English (1)	Math Applications in Agriculture, Food and Natural Resources (1) Approved Advanced Math Courses	Advanced Plant and Soil Science (1) or Approved Advanced Science Courses	Government/Economics	

High School/ Industry Certifications/Performance Acknowledgements

State Approved

Agriculture Mechanics, API Welding, AWS D1.1 Structural Steel, AWS D9.1 Sheet Metal Welding, AWS Certified Welder, AWS SENSE Welding Level 1, NCCER Sheet Metal, NCCER CORE, NCCER Welding

District Approved

3G Flux Cored Welding, 3G Welding Position, Angler Instructor, Archery Instructor, Hunter Education, Quality Counts, ServSafe Certification, Six Sigma, Teen CERT, Texas Friendly Ambassador Program, OSHA 30 Hour General Industry

Career & Technical Student Organizations:

FFA, SkillsUSA

Certificate/ License*	Associate's Degree	Bachelor's Degree	Master's/ Doctoral Professional Degree	Occupations	Median Wage	Annual Openings	% Growth
Certified Professional Agronomist	Heavy Equipment Maintenance Technology/ Technician	Agricultural Engineering	Agricultural Engineering	Outdoor Power Equipment and Other Small Engine Mechanics	\$32,406	366	16%
Certified Reliability Engineer	Agricultural Mechanization, General	Agricultural Mechanization, General	Agricultural Mechanization, General	Welders	\$41,350	6,171	9%
Certified Irrigation Designer	Small Engine Mechanics and Repair Technology/ Technician	Agricultural Education		Farm Equipment Mechanics and Service Technicians	\$39,915	304	17%
Fluid Power Mobile Hydraulic Mechanic	Welding Technology/ Welder			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.