



# Power, Structural and Technical Systems



**Course Overview:** Focuses on careers in the planning, implementation, production, management, processing, and/or marketing of agricultural commodities and services.

**Career Goal (O\*NET Code):** Welder and Cutter (51-4121.02), Agricultural Engineer (17-2021), Welder-Fitter (51-4121.03).

**Student's Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**School:** Mabank High School **Grade:**  9th  10th  11th  12th  AR  
**Primary Endorsement:** Business & Industry **Additional Endorsements:**  Arts & Humanities  Multidisciplinary  
 Public Service  STEM  
**Parent's Signature:** \_\_\_\_\_ **Student's Signature:** \_\_\_\_\_

## SUGGESTED COURSEWORK

## EXTENDED LEARNING EXPERIENCES

Middle School	8th	HS Courses:	Algebra I Art I Health	Spanish I Touch Systems Data Entry	<b>Curricular Experiences:</b> <a href="#">Skills USA</a> <a href="#">Texas FFA Association</a>	<b>Extracurricular Experiences:</b> Agricultural Mechanics Exhibition Agriscience Fair Farm Bureau Exchange Programs National Engineering Design Competition Student Government UIL Academic Competitions
High School	9th	<b>Core Courses:</b>	English I Algebra I or Geometry Biology	World Geography Languages other than English I Physical Education		
		<b>Career-Related Electives:</b>	Principles of Agriculture, Food and Natural Resources			
	10th	<b>Core Courses:</b>	English II Geometry or Alg II IPC or Chemistry	World History Languages other than English II		
		<b>Career-Related Electives:</b>	Agricultural Mechanics and Metal Technologies (WLDG1323 & WLDG1317)			
	11th	<b>Core Courses:</b>	English III Algebra II, Math Models, or Pre-Cal Physics	United States History Languages other than English III		
		<b>Career-Related Electives:</b>	Agricultural Structure & Design			
12th	<b>Core Courses:</b>	English IV Alg II, Pre-Calculus, AP Calculus Science Elective	Government/Economics Fine Arts Languages other than English IV	<b>COLLEGE CREDIT OPPORTUNITIES -- High School</b>  Students should take Advanced Placement (AP), International Baccalaureate (IB), dual credit, Advanced Technical Credit (ATC), or locally articulated courses (Tech Prep), if possible. List those courses that count for college credit on your campus.		
	<b>Career-Related Electives:</b>	Practicum in Agriculture, Food, and Natural Resources - Welding				
Professional and/or Work-Based Experiences		Metal Erector's Helper	Shop Helper	Welding Assistant	<b>Professional Associations:</b> <a href="#">American Society of Agricultural and Biological Engineers</a> <a href="#">American Welding Society</a> <a href="#">Associated General Contractors of America</a> <a href="#">ASTM International</a> <a href="#">Collegiate FFA</a> <a href="#">Post-Secondary Agricultural Students Association</a>	
	<b>Certificates</b>	AWS Welder	NCCER Welding Technician	OSHA CareerSafe		
Postsecondary	<b>Associate Degrees</b>	<a href="#">Agricultural Systems</a>	<a href="#">Construction Technician</a>	<a href="#">Metal Technology</a>	<b>Career Options:</b> Welder Foreman Estimator	
	<b>Bachelor Degrees</b>	Agricultural Engineering	Agricultural Systems Management	Construction Science	<b>Career Options:</b> Site Manager Contractor Agricultural Engineer Extension Engineering Specialist Project Engineer	
	<b>Graduate Degrees</b>	Agricultural & Biological Engineering	Agricultural Mechanization		<b>Career Options:</b> Project Developer Risk Management Specialist	

This program of study (POS) serves as a guide, along with other college and career planning materials, for pursuing college and career goals. POS developed 2017. A Business & Industry endorsement as defined in 19 TAC 74.13(f)(2)(A) requires a coherent sequence of courses for four or more credits in career and technical education (CTE) that consists of at least two courses in the least one advanced CTE same career cluster, including at course, which includes any course that is the third or higher course in a sequence. The final courses in the sequence must be obtained from one of the Agriculture, Food and Natural Resources career cluster.