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): **Heavy Equipment Mechanic** (49-3042), Electrical and Electronic Engineering Technician (17-3023), Farm Equipment Mechanic (49-3041), Global Data Technician (19-4041).

Student Name:_____
Grade: _____
School: _____

SUGGESTED COURSEWORK

Middle School	8th	***HS Courses:***	(Local districts may list high school credit courses here)
High School	9th	***Core Courses:***	English I, Algebra I, Biology, World Geography, Physical Education, Languages other than English I, Professional Communications
		Career-Related Electives:	Principles of Agriculture or Food and Natural Resources
	10th	***Core Courses:***	English II, Geometry, Chemistry, World History, Languages other than English II
		Career-Related Electives:	Introduction to Metal Working or Woodworking
	11th	***Core Courses:***	English III, Algebra II, Physics, United States History
		Career-Related Electives:	Power Systems or Mathematical Applications in Agriculture, Food and Natural Resources
	12th	***Core Courses:***	English IV, Precalculus, AP Environmental Science, Government/Economics, Fine Arts
		Career-Related Electives:	Agricultural Science Internship/Mentorship
Postsecondary	On-the-Job Training	Diesel Mechanic; Shop Helper; Tractor Mechanic	NOTE: These experiences may be started and/or completed as part of the high school experience.
	Certificates	Diesel Mechanic; OSHA CareerSafe; NCCER Heavy Equipment Operator/Core Safety/Welder; Tractor Mechanic	NOTE: Students may earn all or part of these certificates as part of the high school experience.
	Associate Degrees	Agricultural Systems Management; Construction Technician; Metal Technology	
	Bachelor Degrees	Agricultural Engineering; Agricultural Systems Management; Construction Science	
	Graduate Degrees	Agricultural Mechanization; Agricultural & Biological Engineering	

EXTENDED LEARNING EXPERIENCES

Curricular Experiences:
Skills USA
Texas FFA Association

Extracurricular Experiences:
Agricultural Mechanics Exhibition
Agriscience Fair
Farm Bureau Exchange Programs
National Engineering Design Competition
School Newspaper
Student Government
UIL Academic Competitions

Career Learning Experiences:
Apprenticeship
Career Preparation
Internship
Job Shadowing

Service Learning Experiences:
Boy/Girl Scouts
Campus Service Organizations
Community Service Volunteer
Habitat for Humanity
Peer Mentoring / Peer Tutoring

COLLEGE CREDIT OPPORTUNITIES -- High School

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.

Career Options: (Certificates)
Welder
Fitter
Remote Sensing Specialist
Quality Assurance Manager

Career Options: (Associate Degrees)
Welder
Foreman
Estimator

Career Options: (Bachelor Degrees)
Agricultural Engineer
Site Manager Contractor
Extension Engineering Specialist
Project Engineer

Career Options: (Graduate Degrees)
Project Developer
Risk Management Specialist

Professional Associations:
American Society of Agricultural and Biological Engineers
American Welding Society
Associated General Contractors of America
ASTM International
Collegiate FFA
Post-Secondary Agricultural Students Association

Students may select other elective courses for personal enrichment purposes.

This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2009. All plans meet high school graduation requirements as well as college entrance requirements.