



Agriculture, Food, and Natural Resources Career Cluster

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 occupations ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

Statewide Program of Study: *Agricultural Technology and Mechanical Systems*

The Agricultural Technology and Mechanical Systems program of study focuses on occupational and educational opportunities associated with applying engineering technology and biological science to agricultural problems related to power and machinery, electrification, structures, soil and water use, and processing agricultural products. This program of study includes diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.



Secondary Courses for High School Credit

Level 1	<ul style="list-style-type: none"> Principles of Agriculture, Food, and Natural Resources (13000200)
Level 2	<ul style="list-style-type: none"> Agricultural Mechanics and Metal Technologies (13002200)
Level 3	<ul style="list-style-type: none"> Agricultural Structures Design and Fabrication (13002300)
Level 4	<ul style="list-style-type: none"> Agricultural Equipment Design and Fabrication (13002350)
Level 5	<ul style="list-style-type: none"> Practicum in Agriculture (13002500) *NOT CURRENTLY OFFERED*

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Intern at an equipment manufacturing facility working with agricultural engineers
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in an FFA career, leadership, and speaking contest like an agriscience fair

Aligned Industry-Based Certifications

- AWS D1.1 Structural Steel – Obtained in Ag Structures
- AWS D9.1 Sheet Metal Welding – Obtained in Ag Equipment



Example Postsecondary Opportunities

Apprenticeships

- Farm Equipment Mechanic I

Associate Degrees

- Diesel Mechanics Technology
- Industrial Mechanics and Maintenance Technology

Bachelor's Degrees

- Agricultural Engineering
- Agricultural Systems Management

Master's, Doctoral, and Professional Degrees

- Agricultural Engineering
- Industrial Technology

Additional Stackable IBCs/License

- Diesel Equipment Technology-Off Highway Specialization CER1
- Accredited Farm Manager



Example Aligned Occupations

Farm Equipment Mechanics and Service Technicians

Median Wage: \$41,258
Annual Openings: 315
10-Year Growth: 23%

Mobile Heavy Equipment Mechanics

Median Wage: \$60,005
Annual Openings: 2,315
10-Year Growth: 31%

Farmers, Ranchers, and Other Agricultural Managers

Median Wage: \$79,064
Annual Openings: 30,363
10-Year Growth: 4%

