

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.

CFISD Program of Study: Plant Science

Successful completion of the Plant Science program of study will fulfill requirements of the Business and Industry endorsement.

The Plant Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of plants and other living organisms. This program of study includes the application of biology and life science to real-world life processes of plants and vegetation, either in laboratories or in the field.



Recommended Course Sequence (credits)(A=advanced)

Students wanting an endorsement in this area must select three (3) or more courses totaling four (4) or more credits with at least one being advanced.

Grade 9	<ul style="list-style-type: none"> Principles of Agriculture, Food, and Natural Resources (1)
Grade 10	<ul style="list-style-type: none"> Greenhouse Operation and Production (1) OR Floral Design (1-fine arts)
Grade 11	<ul style="list-style-type: none"> Advanced Plant and Soil Science K (1-science) (A) OR Advanced Floral Design (1) (A)
Grade 12	<ul style="list-style-type: none"> Capstone – Plant Science (1-science) (A) OR Practicum in Agriculture, Food, and Natural Resources (2) (A)

Aligned Industry-Based Certifications Offered in CFISD

(course) (CCMR=impacts “career ready” status as outlined by the TEA Accountability System for College, Career or Military Readiness)

- BASF Plant Science Certification (Advanced Plant and Soil Science) (CCMR)
- Principles of Floral Design Certification (Capstone – Plant Science) (CCMR)
- Quality Counts Verification (Principles of AFNR)
- Texas State Florists’ Association Knowledge Based Floral Certification (Floral Design) (CCMR)
- Texas State Florists’ Association Level I Floral Certification (Floral Design) (CCMR)
- Texas State Florists’ Association Level II Floral Certification (Advanced Floral Design)

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Work in a part-time job at a landscaping company to learn about production and management of plants. Intern at an agricultural research company, working alongside a biological technician to learn about application of biology to plant production
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in an FFA career, leadership, and speaking contest like an agriscience fair Participate in an industry-related competition like an agriscience fair



Example Postsecondary Opportunities

Apprenticeships

- Horticulturist

Associate Degrees

- Biology/Biological Sciences
- Biological and Physical Sciences

Bachelor’s Degrees

- Horticulture
- Plant Pathology/Phytopathology

Master’s, Doctoral, and Professional Degrees

- Plant Breeding
- Botany/Plant Biology

Additional Stackable IBCs/License

- Nursery Floral License
- Horticulturist Certification



Example Aligned Occupations

Data Source: Texas Wages, Texas Workforce Commission. rev 3/8/2024

Pesticide Handlers, Sprayers, and Applicators, Vegetation

Median Wage: \$44,570
Annual Openings: 121
10-Year Growth: 17%

Biological Technicians

Median Wage: \$47,968
Annual Openings: 665
10-Year Growth: 14%

Farmers, and Other Agricultural Managers

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

AVAILABLE TO STUDENTS AT ALL 12 HIGH SCHOOLS!

- Receive training on industry-standard material, software & equipment.
- Enhance your resume by earning recognized industry-based certifications.
- Get a jump-start by taking advantage of core curriculum dual credit, transferable to 2-yr and 4-yr degrees.

ALL AT A FRACTION OF THE COST!



For more information on this and other CTE programs of study offered in CFISD, visit <https://www.cfisd.net/academics/career-technical-education/programs-of-study>

What’s next? For more information on related programs available to continue your studies at Lone Star College, visit <https://www.lonestar.edu/programs-of-study>

