



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: *Plant Science*

Endorsement: *Business & Industry*

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.



Plant Science Course Sequence

Level 1	Course	Prerequisites Corequisites
	Principles of Agriculture, Food, and Natural Resources 1 credit, 1 class period	Prerequisites: None
Level 2	Course	Prerequisites Corequisites
	Floral Design 1 credit, 1 class period	Prerequisites: Principles of AFNR
	Entrepreneurship I 1 credit, 1 class period	Recommended Prerequisites: None
Industry Based Certifications	<ul style="list-style-type: none"> Principles of Floral Design Certification Texas State Florist's Association Level I, II 	
Level 3	Course	Prerequisites Corequisites
	Advanced Floral Design 1 credit, 1 class period	Prerequisites: Floral Design
Level 4	Course	Prerequisites Corequisites
	Practicum in AFNR, Practicum in Entrepreneurship 2 credits, 2 class periods	Prerequisites: 2 courses in Plant Science Pathway
	Adv. Plant and Soil Science 1 credit, 1 class period	Prerequisites: 3 courses in Plant Science Pathway

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

Aligned Occupations

Pesticide Handlers, Sprayers, and Applicators, Vegetation

Median Wage: \$46,153

Annual Openings: 205

10-Year Growth: 17%

Biological Technicians

Median Wage: \$45,787

Annual Openings: 879

10-Year Growth: 14%

Farmers, Ranchers, and Other Agricultural Managers

Median Wage: \$65,490

Annual Openings: 28,020

10-Year Growth: 4%

To earn the Plant Science Pathway and Business & Industry Endorsement, students must complete at least 3 classes for 4 or more credits.

Plant Science

BUSINESS & INDUSTRY ENDORSEMENT



An example of a four-year plan for a student entering 9th grade to complete the Plant Science Program of Study.

Subject	9th	10th	11th	12th
Language Arts	English 1	English 2	English 3	Advanced English
Mathematics	Algebra 1	Geometry	3 rd Math	4 th Math
Science	Biology or IPC	Biology or Chemistry	Advanced Plant & Soil Science	4 th Science
Social Studies	World Geography	World History	US History	Govt./Econ.
Required CTE courses	Principles of AFNR	Floral Design – counts as Fine Arts	Advanced Floral Design	Practicum in AFNR OR Practicum in Entrepreneurship
Elective	Physical Education	Entrepreneurship I	Elective	
Elective	Foreign Language	Foreign Language	Elective	Elective

Industry Based Certifications

- Principles of Floral Design Certification
- Texas State Florist's Association Level I Floral Certification
- Texas State Florist's Association Level II Floral Certification

Related CTE Elective Courses

- Business Management
- Entrepreneurship II
- Global Business & Human Resource Management

Program of Study Planning

- To complete any Program of Study, a student must complete 3 or more courses for a total of 4 or more credits.
- A student may change their Program of Study at the end of their 9th grade year but must remain in their newly chosen pathway for the remainder of high school if they wish to complete it.
- Students are encouraged to pursue other passions in their academics with the understanding that courses and/or commitments in other programs may conflict with completing their Program of Study.