Plant and Floral Science

The Plant & Floral 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.

Courses for High School Credit

Level 1	• Principles of Agriculture, Food, and Natural Resources
Level 2	• Floral Design • Greenhouse Operation and Production • Entrepreneurship
Level 3	• Horticultural Science • Advanced Floral Design
Level 4	• Advanced Plant and Soil Science • Practicum in Plant & Floral Science

Aligned Industry-Based Certifications

- BASF Plant Science Certification
- Texas State Florists' Association Level II Floral Certification

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• 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	• Participate in an FFA career, leadership, and speaking contest like an agriscience fair • Participate in an industry-related competition like an agriscience fair

TEA Texas Education Agency

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

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

(Based on statewide employment data)

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%

For more information visit: https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources

Plant and Floral Science Course Descriptions:

Principles of Agriculture, Food, and Nat. Resources- AGR0000 (1 Credit)

Level: 1 | Course Fee: None

Prerequisites: None | GPA Weight: Regular

Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.

Greenhouse Operation and Production- AGR2820 (1 credit)

Level: 2 | Course Fee: $25

Prerequisites: None | GPA Weight: Regular

Greenhouse Operation and Production is designed to develop an understanding of greenhouse production techniques and practices. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

Floral Design- AGR1320 (1 credit)

Level: 2 | Course Fee: $50

Prerequisites: None | GPA Weight: Regular

Floral Design is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. Through the analysis of artistic floral styles and historical periods, students will develop respect for the traditions and contributions of diverse cultures. Students will respond to and analyze floral designs, thus contributing to the development of lifelong skills of making informed judgments and evaluations.

Note: This course satisfies a fine arts credit requirement for students on the Foundation High School Program.

Entrepreneurship- BUS1220 (1 credit)

Level: 2 | Course Fee: None

Prerequisites: None | GPA Weight: Regular

Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services.

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Horticultural Science- AGR1310 (1 credit)

Level: 3 | Course Fee: None

Prerequisites: At least 1 additional course in Program of Study | GPA Weight: Regular

Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticulture and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

Advanced Floral Design- AGR2310 (1 credit)

Level: 3 | Course Fee: $50

Prerequisites: Floral Design | GPA Weight: Regular

In this course, students build on the knowledge from the Floral Design course and are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning. This course focuses on building skills in advanced floral design and providing students with a thorough understanding of the design elements and planning techniques used to produce unique specialty floral designs that support the goals and objectives of a specific occasion or event. Through the analysis and evaluation of various occasion and event types, students explore the design needs and expectations of clients and propose and evaluate appropriate creations. From conception to evaluation, students are challenged to create and design appropriate specialty floral designs that meet the needs of the client. Furthermore, an emphasis on budgetary adherence and entrepreneurship equips students with many of the necessary skills needed for success in floral enterprises.

Advanced Plant & Soil Science- AGR4400 (1 credit)

Level: 4 | Course Fee: None

Prerequisites: None | GPA Weight: Regular

Advanced Plant and Soil Science provides a way of learning about the natural world. Students should know how plant and soil science has influenced a vast body of knowledge, that there are still applications to be discovered, and that plant and soil science is the basis for many other fields of science. To prepare for careers in plant and soil science, students must attain academic skills and knowledge, acquire technical knowledge and skills related to plant and soil science and the workplace.

Note: This course satisfies a science credit requirement for students on the Foundation High School Program

Practicum in Plant & Floral Science- AGR4500 (2 credits)

Level: 4 | Course Fee: None

Prerequisites: 2 credits in the Program of Study | GPA Weight: Regular

This practicum course includes a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster.