

Fundamental Horticulture

Career Cluster	Agriculture, Food and Natural Resources
Course Code	18052
Prerequisite(s)	Recommended: Introduction to AFNR
Credit	.5
Graduation Requirement	No
Program of Study and Sequence	Cluster Course – Fundamental Horticulture – Advanced Horticulture or Advanced Plant Science
Student Organization	National FFA Organization
Coordinating Work-Based Learning	Job shadowing, mentoring, internships, entrepreneurships, service learning, workplace tours, apprenticeship, school-based enterprises, Supervised Agricultural Experience (SAE)
Industry Certifications	OSHA 10 Hour Safety Certification (General Industry), National Career Readiness Certificate (NCRC), Commercial Pesticide Applicators Certification, Private Pesticide Applicators Certification
Dual Credit or Dual Enrollment	
Teacher Certification	Agriculture Education
Resources	

Course Description:

Fundamental Horticulture is designed to give students a background in horticultural science and the many career opportunities in nursery, garden, turf and landscape industries. Fundamental Horticulture addresses the biology and genetics involved in production, processing, and marketing of horticulture. Quality nursery and landscape operations require skilled, educated employees. In this course, students develop the necessary knowledge and skills for both entry-level employment and advancement within the horticulture industries. Topics covered include classifying and identifying plants, physiology and propagation, pest management, understanding soil, environmental, and fertility factors affecting plant growth, various horticulture industry sectors, and employability skills. Classroom and laboratory content may be enhanced by utilizing appropriate equipment and technology. Mathematics, biology, English and human relations skills will be reinforced in the course. This class is reinforced through the FFA and Supervised Agricultural Experience (SAE) activities such as the Nursery/Landscape and Floriculture Career Development Events, and related Proficiency Awards. Each student will be expected to maintain a SAE.

Program of Study Application

Fundamental Horticulture is a first pathway course in the Agriculture, Food and Natural Resources Program of Study, Plant Systems pathway. Fundamental Horticulture is preceded by a Cluster course and would be followed by Advanced Horticulture or Advanced Plant Science.

Course Standards

HORT 1 Explain horticultural plant classifications.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
One Recall	HORT 1.1 Classify and identify horticultural plants.	<ul style="list-style-type: none"> • Classify plants using botanical growth habits, landscape uses, culture requirement, and a simple botanical key. • Discuss plant selection and identification for local landscape applications. • Identify landscaping plants. • Identify vegetables and fruits. • Identify floriculture crops. • Identify trees and shrubs. • Identify plants using a dichotomous key.

Notes

HORT 2 Define basic principles of plant physiology and propagation.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
One Recall	HORT 2.1 Explain basic principles of plant physiology and growth.	<ul style="list-style-type: none"> • Describe photosynthesis, osmosis, transpiration, respiration, plant and cell structures. • Illustrate the factors affecting plant growth. • Identify plant parts and their functions. • Choose potted foliage and flower plants for varied light levels. • Interpret plant growth deficiencies.
Two Skill/Concept	HORT 2.2 Demonstrate the propagation of plants by sexual and asexual methods.	<ul style="list-style-type: none"> • Maintain dormant plants. • Propagate plants by seeds. • Transplant seedlings at the appropriate two leaf stage. • Plant bulbs and force to bloom. • Propagate plants in a soilless media. • Plan planting schedules. • Propagate plants by taking cuttings and by division.

Notes

HORT 3 Describe pest management in the horticultural industry.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
	HORT 3.1 Identify principles of pest management.	<ul style="list-style-type: none"> • Identify common plant diseases, insects, and weeds. • Describe methods of pest control for a specific pest. • Identify the proper chemicals for a specific application. • Discuss the requirements for pesticide applicators certification. • List the steps in chemical application. • List and compare the biological pest control methods. • Discuss integrated pest management.

Notes

HORT 4 Analyze soil, environment, and fertility properties as they affect plant growth.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
	HORT 4.1 Examine soil and planting media management.	<ul style="list-style-type: none"> • Distinguish soil mix materials and characteristics. • Compare and contrast the effect soil structure and texture have on water-holding ability. • Experiment with soil amendments. • Test soil pH. • Select soil media. • Sterilize soil/soilless media. • Experiment with outdoor seedbed preparation.
	HORT 4.2 Examine the growing environment and its effect on plant growth.	<ul style="list-style-type: none"> • Analyze water, light, and air quality. • Temperature, humidity, etc.
	HORT 4.3 Identify plant nutrition practices for horticulture plants as they relate to plant growth and health.	<ul style="list-style-type: none"> • Select fertilizers based on analysis. • Identify primary plant nutrients: Nitrogen, Phosphorous, and Potassium. • Test soil mix for fertility by using a soil testing kit. • Read and interpret fertilizer labels and use proper application practices.

Notes

HORT 5 Examine horticulture industry sectors.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
	HORT 5.1 Investigate the care and maintenance of vegetable/fruit crops.	
	HORT 5.2 Investigate the floriculture industry.	
	HORT 5.3 Investigate the nursery/landscape industry.	
	HORT 5.4 Investigate the care and management of turf grass.	

Notes

HORT 6 Develop employability skills related to the Plant Systems Pathway.

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
Two Skill/Concept	HORT 6.1 Develop soft skills to enhance employability.	

Notes