Course Title:	Fundamentals of Horticulture (H/ECE)
Grade(s):	11th/12th

Course Description
This course focuses on the science and practice of horticulture, plant propagation, and culture. Students will develop knowledge and skills to apply basic concepts of plant structure, growth, and function to horticulture industry situations. The effectiveness of integrated pest management and the impact of new technologies on the horticulture industry and environment will also be discussed and tested. Students will practice skills and test theories using the educational landscape, greenhouse, Agriscience lab, and floral lab. The ECE course is affiliated with the University of Connecticut. Students who pass the course with a 70 or higher will earn college credit and receive an official transcript from the University of Connecticut upon request.
Approved Curricular Materials/Textbook(s)
Introductory Horticulture, 7th Edition

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Introduction to the Horticulture Industry	Students will research different career opportunities that are in the realm of horticulture. Students will research different CT-based organizations that are connected with the CT Green Industry, and inquire about the qualifications needed to get a career in horticulture. Students will also demonstrate basic skills in the greenhouse/head house lab spaces, such as clean/organized work stations, soil mixing, inventory, and preparing plant plugs for transplanting.	January
Unit 2: Plant Classification and Taxonomy	Students will identify the different classification and taxonomy sections for horticultural plants. Students will evaluate plants based on their classification and determine the difference between plants based on specific characteristics. Students will be able to identify at least 30 different plants from the National Floriculture CDE Plant ID list based on pictures and live specimen examples.	February
Unit 3: Plant Anatomy	Students will research plant transpiration, photosynthesis, and respiration, and	February-March

and Physiology	what parts of the plant control those processes. Students will identify how plants are able to go dormant in a “non-growing” environment and preserve energy for the growing season. Students will be able to identify and describe all of the anatomy and physiology of a plant's roots, stem, leaves, and flower system. Students will demonstrate how to properly dissect a plant and identify all of the anatomical features on a live specimen. Students will also research and experiment with specialized plants that have different anatomy and physiology when it comes to growing and producing a plant/flower.	
Unit 4: Plant Growth, Fertilizers, Nutrients, and Media	Students will identify how plants use their anatomy to grow and produce flowers/fruit, and what nutrients are needed for effective plant growth. Students will experiment and gather data about different growing methods that are used in the horticultural industry, and discuss whether they are effective or not. Students will use practical skills they have learned in the greenhouse lab to modify and evaluate their own growing methods, and determine if any modifications need to be made to our practices. Students will identify the different fertilizers that are used in the industry, and evaluate their effectiveness on plant growth.	March
Unit 5: Plant Propagation	Students will identify the different methods that are used to propagate plants in the horticultural industry. Students will determine the difference between asexual and sexual plant reproduction, and determine the anatomy of a plant seed. Students will evaluate germination rates in plants, and connect them to plant anatomy and physiology, as well as growth factors/requirements. Students will research and demonstrate many asexual plant propagation techniques, including cutting, grafting, micropropagation, division/separation, budding, and layering.	April
Unit 6: Integrated Pest Management (IPM)	Students will identify the purpose of Integrated Pest Management (IPM) and how it has shaped the horticultural industry. Students will identify different pests and diseases that impact plants, and determine the factors of why they are a problem in the horticultural industry. Students will demonstrate how to take a plant sample from our lab and evaluate it for any pests or diseases/ Students will then create a management plan on how to eradicate or control the pest problem with the specific plant.	April-May
Unit 7: Pesticide/ Insecticide Use	Students will research different chemical pesticides and insecticides that have been introduced in the horticultural industry to combat plant diseases and pests.	May-June

	Students will identify and take inventory of the pesticides and insecticides we have in our lab, and demonstrate how they are used effectively. Students will also research beneficial insects and how horticulturalists have developed a model to use beneficial pests to control unwanted pests in a greenhouse. At the end of this course, students will create a Producers Management Guide (portfolio) of all the concepts covered in the semester, and present it for a final grade associated with ECE credit.	