HORTICULTURAL TECHNOLOGY (HT)

Beginning in the 2018-2019 academic year, the Horticulture Technology: Landscape Construction and Management program and Horticulture Technology: Plant Production program will no longer be accepting new students. Current Thompson School students in these programs will continue to have access to the same high-quality education and resources until they graduate in 2019.

Horticultural technology (HT) students study applied plant science, preparing for environmentally attuned careers in "the green industry." Rigorous first-year foundation courses in plant materials, plant growth and development, and soils support second-year concentrations in landscape construction management or plant production. Courses unique to the program include "pond-less" water features, lighting design/installation, rain harvesting, and hydroponics/aquaponics. Employment opportunities in these areas continue to be excellent. Graduates enter a rapidly expanding job market in plant production, nursery and garden center management, fruit and vegetable production, parks and grounds management, landscape construction and management. Many recent graduates have established their own horticulture enterprises, and others continue their education toward a four-year degree in areas such as environmental horticulture, greenhouse production, or landscape architecture.

Admissions Requirements

Applicants to the horticultural technology program area must present college preparatory English and at least two years of satisfactory work in both college preparatory mathematics and science (one science being biology, with a lab).

Curriculum Fee

Horticultural technology, both concentrations: $831

This one-time curriculum fee is required to cover lab materials, specialized equipment maintenance, and transportation that are unique to the applied nature of the concentration. The curriculum fee covers the entire two-year course of study for one concentration. Any non-TSAS student may be assessed specific course fees, details of which are included in each semester’s Time and Room Schedule. All fees are subject to change.

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Programs


Courses

Horticulture Technology (HT)

HT 404 - Plant Propagation
Credits: 4
Reproduction of plants for horticultural purposes by sexual and asexual methods. Seeds, cuttings, separation, division, layering, grafting, budding, and in vitro propagation. Special fee. Prereq: HORT 207 or permission. 2 lec/1 lab.
Equivalent(s): HT 204

HT 407 - Plant Structure and Function
Credits: 4
Morphology, anatomy, and physiology, with emphasis on the higher plants. Horticultural implications. Lab stresses observations and manipulations of the particulars of plant life. Special fee. 2 rec/1 lab.
Equivalent(s): HT 207

HT 415 - Soils and Land Use
Credits: 2
Introduction to soils with emphasis on physical, morphological, chemical, and biological characteristics and their applications in horticultural land use decisions. Includes soil genesis and classification and soil survey use. Special fee. 3 rec/1 lab/7 wks.
Equivalent(s): HT 215

HT 416 - Soils and Plant Nutrition
Credits: 2
Role of nutrition in plant health care. Macro- and micro-nutrient needs, nutrition deficiency symptoms, soil testing, and fertilizer application techniques in both soil and soil-less media. Special fee. 3 rec/1 lab/7 wks.
Equivalent(s): HT 217, HT 417

HT 427 - Greenhouse Operation and Design
Credits: 2
Managing greenhouse infrastructure and crops for production and retail. This class will focus on irrigation, plant nutrition, pest and disease control and lighting. Labs and experience in our production greenhouse range supplement lectures in this hands-on course.
Equivalent(s): HT 227, HT 227B

HT 450 - Flower Show Design and Construction
Credits: 1
Design, construction, and maintenance of the Thompson School horticultural exhibit at a public flower show. May be repeated. Special fee. 1 rec.
Equivalent(s): HT 250

HT 454 - Irrigation Design
Credits: 3
Design, installation, and operation of irrigation systems in the greenhouse, nursery, field crops, and landscape. Special fee. 1 lec/1 lab.
Equivalent(s): HT 254
HT 459 - Winter Identification of Landscape Trees in the Northeast
Credits: 2
Winter landscape tree morphology and identification. This on-line course begins with introductory lectures on winter landscape tree morphology and family characteristics. Students then learn how to identify more than 60 common deciduous landscape trees by watching videos which show each plant’s winter identification characteristics. Students evaluated through on-line quizzes and a photographed twig collection. Digital camera required. No campus visit, but students need to be geographically located in the Northeast for access to trees. Prereq: FORT 461 or HT 557 or NR 425 or PBIO 566.
Equivalent(s): HT 293

HT 460 - Sustainable Plant Management
Credits: 4
Sustainable practices and principles in selecting, establishing and maintaining woody and herbaceous plants for optimum health. Topics include planting, pruning, fertilization, pest identification, plant culture and communities.

HT 493 - Field Operations
Credits: 1-3
Seven-week or fourteen-week modules of field experience in selected areas of horticulture under the supervision of an appropriate member of the faculty/staff. A student may enroll in two modules per term. A) Floriculture; B) Floral Design; C) Nursery and Garden; D) Landscape; E) Horticultural Therapy. Special fee. Prereq: permission of instructor and student’s adviser.
Equivalent(s): HT 293

HT 494 - Field Operations
Credits: 1-3
Seven-week or fourteen-week modules of field experience in selected areas of horticulture under the supervision of an appropriate member of the faculty/staff. A student may enroll in two modules per term. A) Floriculture; B) Floral Design; C) Nursery and Garden; D) Landscape; E) Horticultural Therapy. Special fee. Prereq: permission of instructor and student’s adviser.
Equivalent(s): HT 294

HT 529 - Horticultural Facilities Mgmt
Credits: 2
Layout, systems, construction, management principles, and horticultural techniques used in controlled growth structures, including greenhouses, propagation houses and beds, cold frames, hoop houses, and lath houses. Includes practicum in daily operation of Thompson School horticultural facilities, with second-year focus on scheduling and supervision. 2 lab.
Equivalent(s): HT 227, HT 227C

HT 530 - Horticultural Facilities Mgmt
Credits: 2
Layout, systems, construction, management principles, and horticultural techniques used in controlled growth structures, including greenhouses, propagation houses and beds, cold frames, hoop houses, and lath houses. Includes practicum in daily operation of Thompson School horticultural facilities, with second-year focus on scheduling and supervision. 2 lab.
Equivalent(s): HT 227, HT 227D

HT 551 - Introduction to Design Communication
Credits: 2
Introduction to methods of communicating garden and landscape design. Lab work covers selected 2-D and 3-D tools and techniques, including instrumental drawing, modeling, and computer-aided drafting and design (CADD). Special fee. Prereq: TSAS 205, Computers in the Workplace. 1 lec/1 lab.
Equivalent(s): FORT 251

HT 553 - "Pond-less" Water Feature Design and Installation
Credits: 2
A major trend in landscape design is the use of water features that range from simple recirculating pond to major waterfalls and fountains. Class starts with the design principles of "pond-less" features and expands to proper installation techniques. Determining water flow, recirculation rates, appropriate pump requirements and filter techniques are critical to a fully functioning feature. Explore differences between "pond-less" and eco-system ponds. Class culminates in the design and installation of a complete system.
Equivalent(s): HT 253

HT 554 - Sustainable Irrigation and Rain Harvesting
Credits: 3
As identifying water resources becomes ever more critical, students learn how to efficiently irrigate the landscape using low volume irrigation with harvested rainwater as the water source. Course focuses on proper design concepts of low volume irrigation as well as the design of rainwater storage systems. Includes developing site plans, identifying soil types and determining plant material to be irrigated. Learn about flow rates, water pressure and the technical components required for a complete system.

HT 555 - Landscape Lighting Design and Installation
Credits: 2
Creating outdoor "rooms" is a hot trend in landscaping. Class starts with design elements that are functional, aesthetically pleasing while minimizing light pollution and electrical usage. Learn various lighting options from LED to other low-voltage systems and their unique technical installation requirements plus how to prepare a good cost estimate. Landscape lighting provides exterior security, comfort and adds visually to the landscape canvas for both private and commercial properties.
Equivalent(s): HT 244, HT 252

HT 559 - Plants in the Horticulture Industry: Identification and Culture
Credits: 4
A comprehensive study of herbaceous and woody plants in the horticulture industry including morphology, classification, identification, and culture of common trees, shrubs, ground cover, perennials, annuals, ferns, ornamental grasses, and bulbs used in the Northeast.

HT 563 - Landscape Construction
Credits: 4
4 lec.
Equivalent(s): HT 263, HT 275
HT 565 - Turf Management  
Credits: 4  
An introductory look at turf grass management; turf grass culture and physiology; identifying cool-season grasses; identifying and controlling turf grass pests (insect, diseases and weeds); controlling pests using traditional, biological and integrated (IPM) practices; establishing cool-season grasses; seed and sod installation; fertilization practices will be covered.

HT 566 - Garden Design and Culture  
Credits: 2  
What makes a garden inviting and sustainable? Explore elements of design then learn how to design and install a variety of gardens that are attractive, integrate with the surrounding environment/ecosystem, and require minimal inputs of time, water, and nutrition. Course emphasizes the selection of native and low maintenance plants. Projects include residential landscape plantings and specialty gardens such as water, rock, rain and themed gardens. Cost estimation and business management considerations also introduced.  
**Co-requisite:** HT 458  
**Equivalent(s):** HT 266

HT 572 - Landscape Design Studio  
Credits: 4  
Principles of residential and commercial landscape design: site analysis, spatial organization, graphics and drafting, use of landscape fixtures and plant materials, final plans and specifications, cost estimates. Special fee. Prereq: HT 257 and HT 563. 2 lec/4-hr lab.  
**Equivalent(s):** HT 272

HT 575 - Hydroponics  
Credits: 2  
Production of hydroponic crops in the greenhouse, focusing on systems management, plant nutritional management, crop types and production schedules. Includes lab in Thompson School production greenhouse range. Special fee. Prereq: HT 407 Plant Structure and Functioning or equivalent.  
**Equivalent(s):** HT 275, HT 563

HT 576 - Greenhouse Crop Production  
Credits: 2  
All aspects of production of floriculture and food crops in the greenhouse for the spring season. Includes lab in our production greenhouse range. Special fee.  
**Equivalent(s):** HT 258, HT 276

HT 585 - Fruit and Vegetable Production  
Credits: 3  
Tree fruits (apple, pears, and peaches) small fruits (strawberries, raspberries, grapes and blueberries) and vegetables grown in New England will be covered. Information will emphasize the growing, maintenance and the marketing of fruits and vegetables from the garden center perspective. Special fee. 2 lec/1 lab.  
**Equivalent(s):** HT 286

HT 591 - Studies  
Credits: 1-3  
Students who have the ability and adequate preparation to work independently may propose a contract to design a course or research project on a new topic not available through existing course offerings. The purpose of this research is to explore new areas in the student’s field of study or to pursue course material in greater depth. Work is supervised by an appropriate faculty/staff member and credit varies depending on the proposed project/research. Areas may include floriculture, floral design, nursery, landscape, and horticultural therapy. Permission required. Course may be repeated up to a maximum of 6 credits.  
**Equivalent(s):** HT 291

HT 592 - Studies  
Credits: 1-3  
Students who have the ability and adequate preparation to work independently may propose a contract to design a course or research project on a new topic not available through existing course offerings. The purpose of this research is to explore new areas in the student’s field of study or to pursue course material in greater depth. Work is supervised by an appropriate faculty/staff member and credit varies depending on the proposed project/research. Areas may include floriculture, floral design, nursery, landscape, and horticultural therapy. Permission required. Course may be repeated up to a maximum of 6 credits.  
**Equivalent(s):** HT 292

HT 597 - Horticultural Work Experience  
Credits: 0  
A guided work experience in a student-selected area of horticulture, providing both a broad overview and a detailed understanding of work in the field. Contracting with an employer for 480 hours of career-oriented work, the student is assigned a wide variety of duties and responsibilities typical of that business or organization. Students maintain a detailed reflective journal of the experience, a portfolio-based summary report, and thorough self-evaluations. Cr/F.  
**Equivalent(s):** HT 297

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**Faculty**

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