

# HORTICULTURE (HORT)

## HORT 120 – SURVEY OF HORTICULTURE

3 credits.

For the beginning student. Scientific basis for horticultural practices; scope of the field of horticulture; introduction to propagation, culture, management, improvement, storage, and marketing of flowers, fruits, ornamentals and vegetables.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## HORT 121 – HORTICULTURE COLLOQUIUM

1 credit.

Overview of world, national, and regional horticulture plants and industries presented by various faculty. History and profiles of research advancing horticulture presented by department faculty.

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## HORT 187 – PLANTS AND THE SCIENCE OF SURVIVAL

3 credits.

Could you grow and gather enough food to feed yourself? Learn the biology behind how to grow healthy plants in a healthy ecosystem by creating plans for a large food garden. Focus on understanding the scientific method, analyzing data and sources, and using scientific research as a tool to make decisions. Identify credible information sources for solving unpredictable, real-world problems faced by food growers. Practice awareness and understanding of the natural world.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

## HORT 227 – PROPAGATION OF HORTICULTURAL PLANTS

3 credits.

Methods of propagation of herbaceous and woody plants, fundamental anatomical and physiological principles underlying sexual and asexual propagation of plants.

**Requisites:** BOTANY/BIOLOGY 130 or ZOOLOGY/BIOLOGY/BOTANY 152

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

## HORT 234 – ORNAMENTAL PLANTS

3 credits.

On-site identification and description, aesthetic qualities and uses, environmental requirements and adaptability of selected ornamental plants with emphasis on annuals, herbaceous perennials, and those used for interior design.

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Fall 2022

## HORT 240 – THE SCIENCE OF CANNABIS

1 credit.

An overview of the history, legality, regulation, anatomy and botany, agronomic and horticultural practices, and end-use potential of industrial hemp. Focus on sustainable agricultural production and processing of industrial hemp for food, fiber, and cannabinoids. Gain real world insight into this rapidly expanding area. Hands-on experience growing, propagating and pollinating hemp.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

## HORT/PL PATH 261 – SUSTAINABLE TURFGRASS USE AND MANAGEMENT

2 credits.

Sustainable use and management of turfgrass landscapes in urban and suburban environments, including home lawns, golf courses, and sports fields. Focus is on creating sustainable and attractive turfgrass landscapes through proper species selection, use of slow-release or organic fertilizer practices, and minimizing the use of pesticides and supplemental irrigation.

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## HORT/PL PATH 262 – TURFGRASS MANAGEMENT LABORATORY

1 credit.

Hands-on turf establishment, cool- and warm-season grass, seed and weed identification, chemical application, and turf cultivation techniques and equipment use, plus field trips to major league sport facilities and golf courses.

**Requisites:** PL PATH/HORT 261 or concurrent enrollment

**Repeatable for Credit:** No

**Last Taught:** Fall 2022

**HORT/LAND ARC 263 – LANDSCAPE PLANTS I**

3 credits.

Field identification, landscape characteristics, uses, environmental requirements, adaptability of woody ornamental plants; their autumn and winter character.

**Requisites:** Sophomore standing and (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 152, or BOTANY 100)

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT 289 – HONORS INDEPENDENT STUDY**

1-2 credits.

Honors research work under direct guidance of a Horticulture faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor. Intended for students in the CALS Honors Program.

**Requisites:** Consent of instructor

**Course Designation:** Honors – Honors Only Courses (H)

**Repeatable for Credit:** Yes, unlimited number of completions

**HORT 299 – INDEPENDENT STUDY**

1-3 credits.

Research work under direct guidance of a Horticulture faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor.

**Requisites:** Consent of instructor

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2023

**HORT/HIST SCI 301 – (HORTI)CULTURAL ROOTS: HUMAN HISTORIES OF PLANTS AND SCIENCE**

4 credits.

Dig into the history of plant sciences to understand why plants and humans have the relationships they do today. Focus on the experiences of Indigenous Americans and People of Color to understand the roots of inequities in horticulture, agriculture, and other plant sciences. Practice skills as a translator of science and history through engagement with scientific publications, library resources, and archival materials. Define important societal questions, collect and analyze evidence, present original conclusions, and contribute to ongoing discussions about the relationship of people and plants. Includes intensive writing and oral presentations.

**Requisites:** Satisfied Communications A requirement

**Course Designation:** Gen Ed – Communication Part B

Breadth – Humanities

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT/F&W ECOL/LAND ARC/PL PATH 309 – DISEASES OF TREES AND SHRUBS**

3 credits.

Fundamental disease concepts, pathogens and causal agents, diagnosis, and biologically rational principles and practices for management of diseases of trees and shrubs. Includes field trips

**Requisites:** (ZOOLOGY/BIOLOGY/BOTANY 152, BOTANY/BIOLOGY 130, or BIOCORE 381) or graduate/professional standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2018

**HORT 320 – ENVIRONMENT OF HORTICULTURAL PLANTS**

3 credits.

Fluctuations and regulations of temperature, light, water, carbon dioxide and pollutants in natural and controlled environments. Effects upon plant growth and development. Adaptive mechanisms. Significance of air ions, electromagnetic fields and other geophysical factors.

**Requisites:** BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 152, AGRONOMY 100, or HORT 120

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT/AGRONOMY/SOIL SCI 326 – PLANT NUTRITION MANAGEMENT**

3 credits.

Functions, requirements and uptake of essential plant nutrients; chemical and microbial processes affecting nutrient availability; diagnosis of plant and soil nutrient status; fertilizers and efficient fertilizer use in different tillage systems.

**Requisites:** (CHEM 103, 109, or 115 and SOIL SCI/ENVIR ST/GEOL 230) or SOIL SCI 301, or graduate/professional standing

**Course Designation:** Breadth – Physical Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**HORT 330 – WINES AND VINES OF THE WORLD**

2 credits.

An introduction to grape production and wine culture targeting students interested in learning the science of growing grapes, winemaking, and wine appreciation. Topics include cultural history and geography of the world's grape-producing regions, principles of plant anatomy and physiology, biochemistry of wine production, wine producing regions of the world and wine styles, and sensory evaluation of wines. Includes a wine tasting discussion to explore the sensory attributes of the wines and production practices specific to the wine production regions to be covered. Students must be 21 years old by the beginning of class.

**Requisites:** Consent of instructor**Course Designation:** Level - Elementary

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

**Repeatable for Credit:** No**Last Taught:** Spring 2023**HORT/SOIL SCI 332 – TURFGRASS NUTRIENT AND WATER MANAGEMENT**

3 credits.

Nutrient requirements of turfgrasses; nature of turfgrass response to fertilization; soil and tissue testing methodology and interpretation; irrigation scheduling; irrigation water quality; use of irrigation and fertilizer to minimize environmental impact; writing effective nutrient management plans.

**Requisites:** SOIL SCI/AGRONOMY/HORT 326 or graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2018**HORT 333 – SURVEY OF CONTROLLED ENVIRONMENT FOOD PRODUCTION**

2 credits.

Introduction and broad overview of indoor cultivation of food crops and hands-on experience in controlled environment food production including organic systems.

**Requisites:** None**Course Designation:** Level - Elementary

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

**Repeatable for Credit:** No**Last Taught:** Fall 2022**HORT 334 – GREENHOUSE CULTIVATION**

2 credits.

Principles of selection, production, handling, use of fruits, vegetables, flowers, and foliage plants grown indoors. One-day field trip required.

**Requisites:** BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 152, AGRONOMY 100, or HORT 120**Repeatable for Credit:** No**Last Taught:** Spring 2024**HORT 335 – GREENHOUSE CULTIVATION LAB**

1 credit.

Provide students with hands-on experience in and understanding of greenhouse cultivation. The optional lab component of HORT 334 Greenhouse Cultivation.

**Requisites:** HORT 334 or concurrent registration**Repeatable for Credit:** No**Last Taught:** Spring 2024**HORT/AGRONOMY 338 – PLANT BREEDING AND BIOTECHNOLOGY**

3 credits.

Principles of transferring plant genes by sexual, somatic, and molecular methods and the application of gene transfer in plant breeding and genetic engineering to improve crop plants.

**Requisites:** (BOTANY/BIOLOGY 130, GENETICS 466, 467, or BIOCORE 381) or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2024**HORT/AGRONOMY/BOTANY 339 – PLANT BIOTECHNOLOGY: PRINCIPLES AND TECHNIQUES I**

4 credits.

Theoretical and practical training in plant biotechnology including molecular biology, protein biochemistry and basic bioinformatic techniques used in fundamental and applied research on plants. Valuable hands-on training to those interested in careers in biotechnology.

**Requisites:** (ZOOLOGY/BIOLOGY/BOTANY 152 or ZOOLOGY/BIOLOGY 102) and (CHEM 104, 109, or 116) or graduate/professional standing**Course Designation:** Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2017**HORT/AGRONOMY/BOTANY 340 – PLANT CELL CULTURE AND GENETIC ENGINEERING**

3 credits.

Presents an overview of the techniques, biology and underlying theory of plant tissue culture, genetic engineering and genome editing. Overviews of research and commercial applications, and issues/challenges in the area of plant biotechnology are also covered.

**Requisites:** (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 152, ZOOLOGY/BIOLOGY 102, or BIOCORE 381) and (CHEM 104, 109, or 116), or graduate/professional standing**Course Designation:** Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2023

**HORT 345 – FRUIT CROP PRODUCTION**

3 credits.

Survey of fruit production, emphasizing commercial production of temperate fruits. Fruit origin, history, classification, physiology, genetics, harvest and post-harvest handling.

**Requisites:** BOTANY/BIOLOGY 130 or ZOOLOGY/BIOLOGY/BOTANY 152

**Course Designation:** Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2022

**HORT 350 – PLANTS AND HUMAN WELLBEING**

2 credits.

Plants provide not only the foundation of food, clothing, and shelter essential for human existence, but also some of the key raw materials for transcendence and abstraction through music, art, and spirituality. Since antiquity, we have co-evolved with plants and their derivative products, with each exerting a domesticating force on the other. It is, for example, impossible to think of our modern life without its plant-based accompaniments in the form of cotton, sugar, bread, coffee, and wood. Yet they are so ubiquitous we may forget they all derive from plants discovered, domesticated, bred, and farmed for millennia in a never-ending pursuit to improve our wellbeing. Major points of intersection between plants and human wellbeing will be explored from a horticultural point of view by highlighting a plant or group of plants that represent a primary commodity or resource through which humans have pursued their own aims and explore effects and impacts on human society.

**Requisites:** None

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Elementary

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT 351 – A DEEPER LOOK AT PLANTS AND HUMAN WELLBEING**

1 credit.

Plants are essential for human wellbeing, yet they are often manipulated in ways that contribute significantly to human and environmental detriment. Provides an opportunity for students to consider the scientific, social, economic, and public policy implications of plants or groups of plants and dive deeply into those subjects for a variety of crops that are essential for human societies.

**Requisites:** Concurrent enrollment in HORT 350

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Elementary

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT/AGRONOMY/ENTOM/PL PATH/SOIL SCI 354 – DIAGNOSING AND MONITORING PEST AND NUTRIENT STATUS OF FIELD CROPS**

1 credit.

Provides students with information necessary to diagnosis and monitor corn, soybean, alfalfa and wheat for pests (insects, weeds, diseases) and nutrient deficiency symptoms including perspectives from Agronomy, Entomology, Horticulture, Plant Pathology and Soil Science. Proper soil and pest sampling information will be provided as will proper cropstaging techniques which are essential for pest and nutrient management.

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Spring 2019

**HORT/AGRONOMY 360 – GENETICALLY MODIFIED CROPS: SCIENCE, REGULATION & CONTROVERSY**

2 credits.

Explores how and why genetically modified (GM) crops are created and their regulation at the federal and state level. Through case studies, students will learn about the impacts of GM crops and critically evaluate arguments both for and against their use. Readings and discussion introduce students to the complex economic, cultural, and political issues surrounding GM crops.

**Requisites:** ZOOLOGY/BIOLOGY 101, BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, BIOCORE 381, GENETICS 466, or GENETICS 467

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**HORT/A A E/AGRONOMY/PL PATH 367 – INTRODUCTION TO ORGANIC AGRICULTURE: PRODUCTION, MARKETS, AND POLICY**

3 credits.

Provides an in-depth understanding of the history of organic agriculture, its production, processing, marketing, and social dimensions, and its impact on environmental, community, and human health.

**Requisites:** ENVIR ST/AGROECOL/AGRONOMY/C&E SOC/ENTOM 103 or graduate/professional standing

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Elementary

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**HORT 370 – WORLD VEGETABLE CROPS**

3 credits.

An overview of the importance of fresh and processed vegetables worldwide. Vegetable origin, history, classification, culture, marketing, physiology, genetics, handling, quality, significance in world cultures and diets.

**Requisites:** BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, or BIOCORE 381

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT 372 – SEMINAR IN ORGANIC AGRICULTURE**

1 credit.

Faculty, regional professionals, local organic farmers, and students present and discuss topics relevant to history, marketing, economics, production, and social context of organic and sustainable agriculture.

**Requisites:** None

**Course Designation:** Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT 375 – SPECIAL TOPICS**

1-4 credits.

Special topics on issues relevant to horticulture.

**Requisites:** None

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Summer 2022

**HORT/AGRONOMY 376 – TROPICAL HORTICULTURAL SYSTEMS**

2 credits.

Highlights the connections between tropical plants and society. Topics include multidisciplinary reflections on the biology of tropical plants, as well as an overview of different production systems and some of the social and environmental problems associated with the utilization of tropical plants in the context of local and global markets. Provides the opportunity to demonstrate comparative skills with respect to local and international challenges posed by the topics we address in class. Illustrates connections between horticulture and conservation, food security, nutrition, and global health.

**Requisites:** Junior standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**HORT 378 – TROPICAL HORTICULTURAL SYSTEMS  
INTERNATIONAL FIELD STUDY**

2 credits.

This international field study will meet during the winter intercession in a tropical country in Central America. Reflect on the role of plants in our daily lives and the effects that our daily choices have on the environment, human health, conflicts, poverty, and development. Provides an opportunity to develop a holistic appreciation of horticulture by highlighting the interactions between plants and society. Discuss some of the social, scientific and environmental challenges that conventional, sustainable and organic horticulture practices face in the production, marketing, and use of tropical crops. The field study will provide an opportunity to contextualize what was learned during "Tropical Horticultural Systems" (HORT/AGRONOMY 376). Visit diverse agricultural systems, such as small farms, large-scale operations, market growers, and industrial export businesses. In addition, we will visit agronomic centers, botanical gardens, herbaria, germplasm banks, and nature preserves.

**Requisites:** HORT/AGRONOMY 376

**Course Designation:** Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**HORT 380 – INDIGENOUS FOODWAYS: FOOD AND SEED  
SOVEREIGNTY**

2 credits.

Indigenous foods of North America are a vital component of modern agricultural and food systems. Indigenous foods and foodways will be examined from interdisciplinary historical, legal, biological, and social perspectives. Historic indigenous foodways of the present-day upper Midwestern United States and the impact on food and seed sovereignty of settler colonialism and subsequent agricultural practices and policies will be explored. Current efforts to re-claim agricultural traditions and foodways to improve public health, economic opportunity, and food and seed sovereignty will be covered, including the right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, to define one's own food and agriculture systems, and to control the mechanisms and policies that govern food distribution. Hands-on activities are featured; previous examples include cooking with indigenous foods, ice fishing, and tapping maple trees for syrup.

**Requisites:** Sophomore standing

**Course Designation:** Breadth – Social Science

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**HORT 399 – COORDINATIVE INTERNSHIP/COOPERATIVE EDUCATION**

1-8 credits.

Internship under guidance of a Horticulture faculty or instructional academic staff member and internship site supervisor. Students are responsible for arranging the work and credits with the Horticulture faculty or instructional academic staff member and the internship site supervisor.

**Requisites:** Consent of instructor**Course Designation:** Level - Advanced

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2024**HORT 400 – STUDY ABROAD IN HORTICULTURE**

1-6 credits.

Provides an area equivalency for courses taken on Madison Study Abroad Programs that do not equate to existing UW courses. Current enrollment in a UW-Madison study abroad program

**Requisites:** None**Repeatable for Credit:** Yes, unlimited number of completions**HORT/AGRONOMY 501 – PRINCIPLES OF PLANT BREEDING**

3 credits.

Principles involved in breeding and maintaining economic crops; factors affecting the choice of breeding methods; alternative approaches through hybridization and selection.

**Requisites:** (GENETICS 466 or 467) and (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, or BIOCORE 381) or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2022**HORT/AGRONOMY 502 – TECHNIQUES OF PLANT BREEDING**

1 credit.

Lab and field techniques used in breeding and maintaining economic crops.

**Requisites:** (GENETICS 466 or 467) and (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, or BIOCORE 381) or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2019**HORT/F&W ECOL/SOIL SCI 524 – URBAN SOIL AND ENVIRONMENT**

3 credits.

Many environmental issues related to urbanization are derived from the manipulation of soil. By coupling contemporary literature in urban soils with soil science, students will be able to evaluate environmental issues within the urban environment and provide new ways of remediating their impact.

**Requisites:** (PHYSICS 103, 201, 207, or 247) and (SOIL SCI/ENVIR ST/ GEOG 230 or SOIL SCI 301 or concurrent), or graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2017**HORT/GENETICS 550 – MOLECULAR APPROACHES FOR POTENTIAL CROP IMPROVEMENT**

3 credits.

Introduction of basic concepts of plant molecular biology and molecular techniques in current use. Topics include: organization and regulation of plant genes, gene cloning and analysis, transformation systems for plants, and molecular techniques for crop improvement.

**Requisites:** BIOCHEM 501 and (GENETICS 466 or 467); or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Advanced

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2023**HORT/F&W ECOL/STAT 571 – STATISTICAL METHODS FOR BIOSCIENCE I**

4 credits.

Descriptive statistics, distributions, one- and two-sample normal inference, power, one-way ANOVA, simple linear regression, categorical data, non-parametric methods; underlying assumptions and diagnostic work.

**Requisites:** Graduate/professional standing**Course Designation:** Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2023**HORT/F&W ECOL/STAT 572 – STATISTICAL METHODS FOR BIOSCIENCE II**

4 credits.

Polynomial regression, multiple regression, two-way ANOVA with and without interaction, split-plot design, subsampling, analysis of covariance, elementary sampling, introduction to bioassay.

**Requisites:** STAT/F&W ECOL/HORT 571**Course Designation:** Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2024

### **HORT/AGRONOMY/AN SCI/GENETICS 615 – GENETIC MAPPING** 3 credits.

Computing-intensive course to prepare students for genetic mapping research; linkage analysis and QTL mapping in designed crosses; linkage disequilibrium and association analysis (GWAS). Recommended preparation is undergraduate courses in genetics and statistics and prior experience writing R scripts (such as module 1 of STAT 327).

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2023

### **HORT/BOTANY/SOIL SCI 626 – MINERAL NUTRITION OF PLANTS** 3 credits.

Essential and beneficial elements, solutions and soil as nutrient sources, rhizosphere chemistry, nutritional physiology, ion uptake and translocation, functions of elements, nutrient interactions, genetics of plant nutrition.

**Requisites:** BOTANY 500 or graduate/professional standing

**Course Designation:** Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2019

### **HORT 681 – SENIOR HONORS THESIS** 2-4 credits.

Individual study and research for students completing theses under direct guidance of a Horticulture faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor. Intended for students in the CALS Honors Program.

**Requisites:** Consent of instructor

**Course Designation:** Honors - Honors Only Courses (H)

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2015

### **HORT 682 – SENIOR HONORS THESIS** 2-4 credits.

Individual study and research for students completing theses under direct guidance of a Horticulture faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor. Intended for students in the CALS Honors Program. Continuation of HORT 681

**Requisites:** Consent of instructor

**Course Designation:** Honors - Honors Only Courses (H)

**Repeatable for Credit:** No

**Last Taught:** Spring 2016

### **HORT 699 – SPECIAL PROBLEMS** 1-4 credits.

Provides academic credit for directed study under direct guidance of a Horticulture faculty member or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor.

**Requisites:** Consent of instructor

**Course Designation:** Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2023

### **HORT 799 – PRACTICUM IN HORTICULTURE TEACHING** 1-3 credits.

Instructional orientation to teaching at the higher education level in the agricultural and life sciences, direct teaching experience under faculty supervision, experience in testing and evaluation of students, and the analysis of teaching performance.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2023

### **HORT/AGRONOMY 811 – BIOMETRICAL PROCEDURES IN PLANT BREEDING** 3 credits.

Use of statistical methods to facilitate improvements in quantitative traits of cultivated plants.

**Requisites:** Graduate/professional standing and STAT/F&W ECOL/ HORT 572

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

### **HORT/AGRONOMY 812 – SELECTION THEORY FOR QUANTITATIVE TRAITS IN PLANTS** 2 credits.

Discuss advanced topics in selection theory and the utilization of molecular markers in selection.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

### **HORT 875 – SPECIAL TOPICS** 1-4 credits.

Special topics on issues relevant to Horticulture.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2020

### **HORT 910 – SEMINAR**

1 credit.

Weekly seminar topics in agronomy and horticulture.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

### **HORT/AGRONOMY/GENETICS 957 – SEMINAR-PLANT BREEDING**

1 credit.

Graduate seminar in Plant Breeding Plant Genetics (PBPG) that requires students to give oral scientific presentations on topics chosen by the instructors and/or the student's thesis research. This seminar is coordinated by PBPG faculty on a rotating basis.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

### **HORT 990 – RESEARCH**

1-12 credits.

Independent research and writing for graduate students under the supervision of a faculty member.

**Requisites:** Consent of instructor

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024