

**Description — History  
of  
Courses**

**901A. Doctoral Seminar**  
Fall. 3(3-0) Admission to doctoral program in history.  
HST 901A, HST 901B and HST 901C constitute a three-term seminar required of students entering doctoral program. Under guidance of dissertation director and course instructors student will prepare major research paper and submit for criticism by all participants. Grades are given for the three terms at the end of HST 901C.

**901B. Doctoral Seminar**  
Winter. 3(3-0) HST 901A.  
Continuation of HST 901A.

**901C. Doctoral Seminar**  
Spring. 3(3-0) HST 901B.  
Continuation of HST 901B.

**999. Doctoral Dissertation Research**  
Fall, Winter, Spring. Variable credit.  
Approval of department.

**HISTORY OF ART**

See Art.

**HORTICULTURE HRT**

**College of Agriculture and Natural Resources**

**101. Principles of Horticulture**  
Fall, Spring. 4(3-2) Not open to students with credit in HRT 201.  
Principles of horticultural science and horticultural crop production, as related to fruits, vegetables, flowers and landscape plants.

**205. Greenhouse Structures and Crop Production**  
(418.) Fall. 3(2-2)  
Commercial greenhouse operations, structures, equipment and crop production procedures.

**208. Greenhouse Cut Flower Production**  
Fall. 4(3-2)  
Commercial production of cut flowers including scheduling, culture practices, equipment, post-harvest considerations, and management decisions. One field trip required.

**209. Foliage Plants**  
Winter. 4(3-2)  
Identification, culture, propagation, and utilization of common foliage plants with emphasis on species and cultivars used for interior plantscapes.

**211. Ornamental Trees and Narrow-leaved Evergreens**  
Fall. 4(2-4)  
Identification, adaptation and evaluation of trees, deciduous shrubs, narrow-leaved evergreens and woody vines. Emphasis is on the aesthetic and functional uses of trees and shrubs in the landscape.

**212. Ornamental Flowering Shrubs and Broad-leaved Evergreens**  
Spring. 4(2-4) HRT 211 or approval of instructor.  
Identification, adaptation and evaluation of trees, deciduous shrubs, broad-leaved evergreens, woody vines and ground covers. Emphasis is on the flowering characteristics and aesthetic and functional uses of plants in the landscape.

**221. Commercial Plant Propagation**  
Winter. 4(3-2) HRT 101.  
Principles of plant propagation by seed, cuttage, layerage, and graftage employed by nurseries; use of growth regulators and environmental treatments in plant propagation.

**248. Floral Marketing**  
Winter. 3(2-2) HRT 101 or approval of instructor.  
Floral marketing practices including production, wholesale, and retail marketing channels. Field trips required.

**275. Landscape Horticulture Operations**  
Winter. 3(2-2)  
Management aspects of landscape construction and maintenance operations. Emphasis on marketing of services, organization of labor, reporting procedures, horticultural specifications, bidding and project management.

**319. Small Fruit Production**  
(419.) Winter of odd-numbered years. 3(3-0) HRT 101, BOT 205, BOT 301.  
Commercial production culture, utilization and physiology of strawberries, grapes, blueberries and raspberries.

**320. Tree Fruit Production**  
Fall. 4(3-2) HRT 101, Juniors.  
Commercial production of principle tree fruit crops of Michigan with emphasis on planting, soil management, fertilization, pruning, thinning, and grafting.

**325. Ornamental Plant Management**  
Spring. 4(3-2) HRT 101, HRT 211, HRT 212.  
Transplanting and maintenance of landscape plants subject to stresses of urban environment. Development of annual maintenance specifications. Identification and evaluation of herbaceous annuals, biennials and perennials for landscape.

**326. Herbaceous Ornamental Plants**  
Summer. 4(3-3) HRT 101 or BOT 205 or approval of department.  
Identification, evaluation, and utilization of annual, biennial, and herbaceous perennial plants for landscape. Includes bulbs, herbs, grasses, ferns, and cultivated plants.

**327. Landscape Design: A Horticultural Approach**  
Spring. 4(3-2) HRT 212 or concurrently.  
Landscape design techniques. Plant selection and use. Plant and site relationships. Client and designer interaction. Laboratory emphasizes elementary drafting techniques, landscape plan preparation and interpretation.

**330. Special Problems**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.  
Individual work on a field, laboratory or library research problem of special interest to the student.

**331. Selected Topics (MTC)**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits if different topics are taken. Approval of department.  
Selected topics in horticultural science of current interest and importance.

**402. Principles of Weed Control for Horticultural Crops**  
Spring. 4(3-2) CEM 143, BOT 301.  
Principles underlying weed control practices for horticultural crops. Weed biology and factors involved in biological, cultural, mechanical and chemical control. Collection of 40 weed species required.

**408. Principles of Plant Breeding**  
Winter. 4(3-2) CSS 350. Interdepartmental with and administered by the Department of Crop and Soil Sciences.  
Application of genetics and other sciences to breeding and improvement of agronomic and horticultural crops.

**410. Fruit Tree Physiology I**  
Winter of even-numbered years. 4(4-0) Juniors, BOT 301, HRT 101.  
Physiological effects of nutrition, moisture, light, temperature and culture as related to tree fruit crops.

**412. Fruit Tree Physiology II**  
Winter of odd-numbered years. 3(3-0) Juniors, HRT 101, BOT 301.  
Physiology of flowering and fruit development in woody plants with special reference to chemical and cultural methods of manipulation.

**416. Handling and Storage of Horticultural Crops**  
Winter of even-numbered years. 4(3-2) Juniors.  
Biological principles involving physical movement of fresh products from farm to consumer; physiological processes affecting maturity, quality and condition; selection and use of handling, storage, and transport facilities.

**417. Controlled Plant Environment**  
Fall. 3(3-0) HRT 101, HRT 205 or concurrently, BOT 301 or BOT 414.  
Control of greenhouse environment and its effect on growth and production of horticultural crops.

**434. Greenhouse Container-Grown Plant Production**  
Winter. 4(3-2) HRT 205, HRT 417; approval of department.  
Flower crop physiology; management of container-grown plant production. One field trip required.

**435. Commercial Bedding Plant Production**  
Spring of odd-numbered years. 4(3-2) HRT 205.  
Production and marketing of bedding plants. Includes germination, soils, transplanting, environmental factors, production practices, major species, structures, equipment, systems, problems, economics and marketing. One field trip required.

**440. Nursery Management**  
Fall. 3(2-2) Juniors.  
Management practices applied to wholesale nursery production and marketing. One all-day field trip to visit nurseries is required.

**Hotel, Restaurant and Institutional Management — Description  
of  
Courses**

**452. Warm Season Vegetables**  
Spring. 4(3-2) HRT 101, BOT 301, CSS 210.

Warm season crops with emphasis on botany, taxonomy, morphology, growth processes, production, harvesting, handling, quality and composition. Field trip required.

**456. Cool Season Vegetables**  
Fall. 4(3-2) HRT 101, BOT 301, CSS 210.

Cool season crops with emphasis on botany, taxonomy, morphology, growth processes, production, harvesting, handling, quality and composition. Field trip required.

**460. Tropical Vegetables**  
Spring of odd-numbered years. 3(3-0) HRT 101 or approval of instructor.

Culture of tropical vegetables in commercial and subsistence cropping systems. Role in human nutrition, income generation and international development.

**462. Tropical Fruits and Spices**  
Spring of even-numbered years. 3(3-0) HRT 101 or approval of instructor.

Culture of tropical fruits and spices in commercial and subsistence cropping systems. Role in human nutrition, income generation and international development.

**801. Research Procedures in Plant Science**  
Winter. 4(3-2) Approval of department.

Orderly approach to problems of biological research in relation to basic principles of research.

**808. Physiology of Horticultural Crops**  
Winter of even-numbered years. 4(3-2) BOT 415.

Physiology of grafting, juvenility, flowering of woody plants, fruiting, senescence, bud and seed dormancy as related to horticultural crops. Emphasis on critical review of literature.

**814. Plant Breeding and Genetics Seminar**  
Winter. 1(1-0) May reenroll for a maximum of 2 credits. Approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Crop and Soil Sciences.

**815. Selected Topics in Plant Breeding and Genetics (MTC)**  
Fall, Winter, Spring, Summer. 2 to 5 credits. May reenroll for a maximum of 12 credits if different topics are taken. Approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Crop and Soil Sciences.

Selected topics in plant breeding including: host-plant resistance, nutrition and quality, computerized records and data analysis, classical literature and strategies for improving field, horticulture and forestry crops.

**816. Special Problems in Plant Breeding and Genetics**  
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 8 credits. Approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry.

Students may conduct research in a laboratory, greenhouse or field-plot on a selected subject or study selected published literature under the supervision of a faculty member.

**817. Plant Breeding Methods**  
(HRT 823.) Fall. 3(3-0) STT 422 or concurrently. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Crop and Soil Sciences.

Methods, strategies and practices in organization and operation of plant breeding programs. Emphasis on practical application of classical, modern and futuristic approaches to plant breeding.

**819. Plant Breeding Systems**  
(HRT 822.) Winter. 3(3-0) CSS 821, STT 422. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Breeding systems for improvement of self and cross pollinated and of vegetatively propagated crops. The genetic basis for parent selection.

**821. Genetic Concepts in Plant Breeding**

Fall. 3(3-0) CSS 350 or ZOL 441. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Crop and Soil Sciences.

Genetic structure of plant populations, gene action, inbreeding, outbreeding, heterosis, linkage and recombination, genetic architecture of traits, genetic distance.

**825. Post Harvest Physiology**  
Winter of odd-numbered years. 4(3-2)

Biochemical and biophysical changes associated with the maturation, ripening and senescence of harvested horticultural plants.

**830. Special Research Problems**  
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of department.

**831. Selected Topics (MTC)**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits if different topics are taken. Approval of department.

Selected topics in horticultural science of current interest and importance.

**836. Evolution of Crop Plants**  
Fall of even-numbered years. 3(3-0) CSS 821 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry.

Cultural and biological aspects of evolution under domestication; origin and diversity of cultivated plants.

**838. Tissue Culture for Plant Breeding**  
(840.) Winter of even-numbered years. 3(2-2) BOT 414, CSS 821. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry.

The application of plant cell, protoplast and tissue culture methodologies and principles to crop improvement.

**850. Plant Interactions in Agroecosystems**  
Winter of odd-numbered years. 3(3-0) BOT 450, BCH 401, CSS 402.

Interactions between plants affecting mortality and plastic responses in horticultural, agronomic, and forest systems, including interference and symbiosis.

**899. Master's Thesis Research**  
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**940. Theoretical Population Genetics**  
Winter. 4(4-0) MTH 113, STT 422 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Forestry.

Discussion of mathematical theories in population genetics and experimental works on natural and laboratory populations.

**941. Quantitative Genetics in Plant Breeding**  
Spring of even-numbered years. 4(4-0) STT 423, CSS 823 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Crop and Soil Sciences.

Calculation and implication of genetic parameters. Linkage. Coancestry and inbreeding. Covariance between relatives. Heritability and selection. Genotype by environment interaction. Emphasis on relationship of quantitative genetics to plant breeding.

**944. Physiological Genetics**  
Winter of odd-numbered years. 3(3-0) BOT 413; CSS 821. Interdepartmental with the departments of Crop and Soil Sciences, and Forestry. Administered by the Department of Forestry.

Control of variation in higher plants including adaptive physiology, quantitative genetics, growth correlation, biochemical genetics, hybrid physiology, and geneecology.

**999. Doctoral Dissertation Research**  
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**HOTEL, RESTAURANT AND  
INSTITUTIONAL  
MANAGEMENT HRI**

**College of Business and Graduate  
School of Business  
Administration**

**102. Introduction to Hospitality Management**

Winter. 4(4-0) Not open to Seniors. Survey of the sectors, segments and disciplines of the hospitality and tourism industries; of the nature of career opportunities; of the hotel and restaurant management and travel and tourism management curricula.

**203. Hospitality Accounting**  
Fall, Winter, Spring. 4(4-0) CPS 115; HRI 102; ACC 202.

Principles of accounting, both financial and managerial, applied to hospitality industry enterprises.

**235. Physical Facilities Management**  
(HRI 335.) Winter. 4(4-0) HRI 102.

Planning and control of building systems in lodging and foodservice operations. Heat, light, power, water, ventilation, sanitation, sound, traffic; furniture, fixtures, and equipment.

**237. Lodging Management**  
Winter. 4(4-0) HRI 102.

Typical departments and logical functions in operation of transient, destination and convention lodging properties.