Horticulture—Descriptions of Courses

204L. Principles of Horticulture II Laboratory Spring, 3(2-3)
P: HRT 205, or concurrently.
SA: HRT 202L

211. Ornamental Trees and Narrow-Leaved Evergreens Fall, 3(2-3)
Identification, adaptation, evaluation, management, and landscape uses of trees, deciduous shrubs, narrow-leaved evergreens, and woody vines.
SA: HRT 202L

212. Ornamental Flowering Shrubs and Broad-Leaved Evergreens
Identification, adaptation, evaluation, management, and landscape uses of flowering trees, deciduous shrubs, broad-leaved evergreens, woody vines and ground covers.

221. Greenhouse Structures and Management Fall, 3(2-0)
Planning and operation of a commercial greenhouse. Structures, coverings, heating, cooling, ventilation, irrigation, fertilization, root media, and pest control. Field trips required.

225A. Basic Floral Design Spring, 2(1-2)

225B. Advanced Floral Design Spring, 2(1-2)
P: HRT 225A or concurrently.
Marketing, selling, and designing flowers for weddings, funerals, and other special events. Identification, handling, and design use of fresh flowers and other materials. Laboratory fee required. Second half of semester.

310. Nursery Management Fall, 3(2-3)
P: HRT 205, or concurrently.
SA: HRT 201L

322. Greenhouse Production I: Potted Plants Fall, 3(1-4)
P: HRT 204, or concurrently.
Commercial production of citrus greenhouse crops with emphasis on flowering and potted foliage plants and on seed germination. Field trips required.

323. Greenhouse Production II: Cut Flowers and bedding Plants Spring, 3(1-4)
P: HRT 204, or concurrently.
Commercial production of bedding plants and cut flowers. Finishing procedures for selected potted plant crops. Field trips required.

325. Floral Distribution and Marketing Spring, 3(2-2)
P: HRT 204 or concurrently.
Business operations of wholesale and retail floral outlets. Identification, care, and handling of commercial cut flowers and foliage. Field trips required.

331. Tree and Small Fruit Production and Management Fall, 3(2-3)
P: HRT 204.
Commercial aspects of tree and small fruit production. Procedures used in production of major fruit crops grown in Michigan: apples, cherries, peaches, grapes, blueberries, brambles, and strawberries. Field trips required.
SA: HRT 330

341. Vegetable Production and Management Spring, 3(2-3)
P: HRT 204.
Field production of vegetable crops. Marketing systems, tillage practices, field establishment, cultural management, post-harvest handling and storage. Field trips required.
SA: HRT 440, HRT 442

394A. Retail Florist Practice Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
P: HRT 204.
R: Open only to juniors and seniors.
SA: HRT 394A and HRT 490.

401. Physiology and Management of Herbaceous Plants Spring, 3(3-0)
P: HRT 221, or concurrently.
SA: HRT 221.
Botanical and physiological responses of herbaceous plants to light, temperature, nutrients, and gases. Management of these factors for optimum production.

403. Handling and Storage of Horticultural Crops Fall, 3(3-0)
P: BOT 205 or BS 110.
SA: HRT 221.
SA: HRT 490.
SA: HRT 492.
Management of these factors for optimum production.

404. Horticultural Management (W) Spring, 3(2-3)
P: EC 201 or EC 202; HRT 204 or CSS 370 or FOR 404.
R: Open only to seniors in the College of Agriculture and Natural Resources. Completion of Tier I writing requirement. Integration of physiological, genetic, economic, and production principles to develop a horticultural business plan. Management techniques. Environmental impacts of business and production practices.
SA: HRT 498

411. Landscape Contract Management Fall, 3(2-2)
P: HRT 311.
### Descriptions — Horticulture of Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>431</td>
<td>Reproductive Physiology of Tree Fruits</td>
<td>Studies flowering and fruiting in tree fruits: scientific basis, applications</td>
<td></td>
</tr>
<tr>
<td>441</td>
<td>Plant Breeding and Biotechnology</td>
<td>Focuses on genetically improved plants and traditional biotechnological means</td>
<td></td>
</tr>
<tr>
<td>451</td>
<td>Cellular and Molecular Principles and Techniques for Plant Sciences</td>
<td>Studies principles and techniques in agricultural plant biotechnology</td>
<td></td>
</tr>
<tr>
<td>461</td>
<td>World Fruits and Vegetables</td>
<td>Focuses on plant physiology and seed characteristics</td>
<td></td>
</tr>
<tr>
<td>477</td>
<td>Pest Management I: Pesticides in Management Systems</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>487</td>
<td>Pest Management II: Biological Components of Management Systems</td>
<td>Focuses on pest management principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>490</td>
<td>Independent Study in Horticulture</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>491</td>
<td>Selected Topics in Horticulture</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>801</td>
<td>Research Procedures in Plant Science</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>802</td>
<td>Growth and Development of Horticultural Crops</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>819</td>
<td>Advanced Plant Breeding</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>823</td>
<td>Methods in Genetic Engineering of Plants</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>827</td>
<td>Techniques in Cytogenetics</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>831</td>
<td>Plant Evolution and the Origin of Crop Plants</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>832</td>
<td>Plant Mineral Nutrition</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>833</td>
<td>Environmental Plant Physiology</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>839</td>
<td>Master's Research</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>890</td>
<td>Independent Study</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>891B</td>
<td>Selected Topics in Plant Breeding and Genetics</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>892</td>
<td>Plant Breeding and Genetics Seminar</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
<tr>
<td>898</td>
<td>Master's Thesis Research</td>
<td>Studies principles and techniques in pest management</td>
<td></td>
</tr>
</tbody>
</table>

### Course Descriptions

- **431. Reproductive Physiology of Tree Fruits**
  - Spring of odd-numbered years.
  - P: HRT 301 or concurrently.
  - R: Not open to freshmen.
  - Studies principles and techniques in pest management.

- **441. Plant Breeding and Biotechnology**
  - Spring, 4 credits.
  - Interdepartmental with Crop and Soil Sciences, and Forestry.
  - Administered by Crop and Soil Sciences.
  - P: CSS 350 or ZOL 341.
  - Studies principles and techniques in pest management.

- **451. Cellular and Molecular Principles and Techniques for Plant Sciences**
  - Spring, 4 credits.
  - Interdepartmental with Crop and Soil Sciences, and Forestry.
  - Administered by Crop and Soil Sciences.
  - P: CSS 350 or ZOL 341.
  - Studies principles and techniques in pest management.

- **461. World Fruits and Vegetables**
  - Spring of odd-numbered years.
  - P: BS 110 or BOT 105 or HRT 204.
  - R: Open to juniors, seniors, and graduate students.
  - Studies principles and techniques in pest management.

- **477. Pest Management I: Pesticides in Management Systems**
  - Fall, 3 credits.
  - Interdepartmental with Entomology, Crop and Soil Sciences, and Fisheries and Wildlife.
  - Administered by Entomology.
  - P: CEM 143 or BOT 405 or CSS 402, ENT 494 or ENT 470 or ENT 470 or ENT 470 or ENT 328.
  - Studies principles and techniques in pest management.

- **487. Pest Management II: Biological Components of Management Systems**
  - Fall, 3 credits.
  - Interdepartmental with Entomology, Crop and Soil Sciences, Fisheries and Wildlife, and Forestry.
  - Administered by Entomology.
  - P: ENT 494 or ENT 470 or BOT 405 or CSS 402 or FW 328.
  - R: Completion of Tier I writing requirement.
  - Studies principles and techniques in pest management.

- **490. Independent Study in Horticulture**
  - Fall, Spring, Summer.
  - 1 to 3 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.
  - R: HRT 202.

- **491. Selected Topics in Horticulture**
  - Fall.
  - 1 to 3 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.
  - R: HRT 202.

- **801. Research Procedures in Plant Science**
  - Spring, 3 credits.
  - Applications of epistemology and logic in plant science research.
  - R: BOT 201.

- **802. Growth and Development of Horticultural Crops**
  - Spring of even-numbered years.
  - Physiology of flowering and fruiting in tree fruits.

- **819. Advanced Plant Breeding**
  - Fall, 3 credits.
  - Interdepartmental with Crop and Soil Sciences, and Forestry.
  - P: CSS 450, STT 422.
  - R: Approval of department.

- **823. Methods in Genetic Engineering of Plants**
  - Fall of even-numbered years.
  - 4 credits.
  - R: Approval of department.

- **827. Techniques in Cytogenetics**
  - Fall of odd-numbered years.
  - 1 credit.
  - R: Approval of department.

- **831. Plant Evolution and the Origin of Crop Species**
  - Fall of even-numbered years.
  - Cultural and biological aspects of the evolution of domestic plants.

- **832. Plant Mineral Nutrition**
  - Full of odd-numbered years.
  - R: Approval of department.

- **833. Environmental Plant Physiology**
  - Spring of odd-numbered years.
  - P: BOT 301 or BOT 414 or BOT 415.
  - Interaction of plant and environment.

- **839. Master's Research**
  - Fall, Spring, Summer.
  - 1 to 6 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.

- **890. Independent Study**
  - Fall, Spring, Summer.
  - 1 to 6 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.

- **891B. Selected Topics in Plant Breeding and Genetics**
  - Fall, Spring, Summer.
  - 1 to 2 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.

- **892. Plant Breeding and Genetics Seminar**
  - Fall, Spring, Summer.
  - 1 to 2 credits.
  - A student may earn a maximum of 6 credits in all enrollments for this course.

- **898. Master's Thesis Research**
  - Fall, Spring, Summer.
  - 1 to 10 credits.
  - A student may earn a maximum of 99 credits in all enrollments for this course.

- **899. Master's Thesis Research**
  - Fall, Spring, Summer.
  - 1 to 10 credits.
  - A student may earn a maximum of 99 credits in all enrollments for this course.

- **900. Advanced Forest Genetics**
  - Fall of odd-numbered years.
  - 2 credits.
  - Administered by Forestry.
941. Quantitative Genetics in Plant Breeding
Spring of even-numbered years. 3(3-0) Interdepartmental with Crop and Soil Sciences, and Forestry. Administered by Crop and Soil Sciences.
P: CSS 450, STT 422.
Theoretical genetic basis of plant breeding with emphasis on traits exhibiting continuous variation. Classical and contemporary approaches to the study and manipulation of quantitative trait loci.

P: STT 464. R: Open only to graduate students in the College of Agriculture and Natural Resources. Linear model techniques to analyze research data characterized by missing and unequal number of observations in classes. Simultaneous consideration of multiple factors. Estimable comparisons. Hypothesis testing. Computational strategies, variance and covariance components. Breeding values.

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course.
R: Open only to Ph.D. students in Horticulture.

HOSPITALITY BUSINESS HB
School of Hospitality Business
The Eli Broad College of Business
and The Eli Broad Graduate School of Management

200. Introduction to the Hospitality Industry
Fall. 3(3-0)
R: Open only to freshmen and sophomores. Survey of all sectors, segments and disciplines of the hospitality and tourism industries. Topics include impact of travel and tourism, hospitality trends, and overview of accounting, marketing, and sales.

237. Management of Lodging Facilities
Spring. 3(3-6)
P: HR 200, one ISP course. R: Open only to freshmen, sophomores and juniors. Operational departments and logical functions in the operation of various types of lodging properties. Planning and control of physical, mechanical, and electrical systems.

265. Quality Food Management
Spring. 3(3-0)
P: HB 209, one ISP course. R: Open only to sophomores and juniors. Standards of microbiology, sanitation, nutrition, and other quality issues in food management. Chemical, health, and workplace standards. Management of product quality and costs.

302. Hospitality Managerial Accounting
Fall, Spring. 3(3-0)
P: ACC 201, CPS 101; HB 200, STT 315 or concurrently. R: Open only to juniors and seniors. Principles of managerial accounting applied to hospitality enterprises. Topics include financial statements, forecasting methods, internal control, and accounting ethics.

307. Organizational Behavior in the Hospitality Industry
Spring. 3(3-4-3)
P: MSC 300, MGT 392, HB 297. R: Open only to juniors and seniors. Human resource management and interpersonal skills in the hospitality industry. Focus on managing in a culturally diverse workplace.

337. Hospitality Information Systems
Fall. 3(3-0)
P: HB 237; CPS 161.
Technology for gathering, analyzing, storing and communicating within the hospitality industry.

345. Quantity Food Production Systems
Fall, Spring. 3(1-4)
P: HB 265. R: Open only to juniors and seniors. Organization of food and beverage operations. Product knowledge, especially purchasing, storing, preparing and production in food service operations. Menu development and recipe management.

533. Professional Work Experience I (W)
Fall, Spring, Summer. (1-0)
P: HB 290. R: Completion of Tier I writing requirement. Work and training in hospitality management and supervision. Written report detailing work experience.

545. Professional Work Experience II (W)
Fall, Spring. (1-0)
P: HR 353. R: Open only to juniors and seniors. Completion of Tier I writing requirement. Professional workplace experience involving planning, controlling, staffing, and organizing. Professionally written reports detailing experiences required.

747. Hospitality Industry Research
Fall, Spring. 3(3-0)
P: HB 317, STT 315. R: Open only to seniors. Open to students with credit in MSC 317. Strategies and techniques for obtaining, analyzing, evaluating, and reporting relevant research data.

745. Innovations in Hospitality Marketing
Fall, Spring. 3(3-8)
P: MISC 300, HB 307; HB 370 or concurrently. R: Open only to seniors. Marketing of hospitality industry products and concepts, amid global competition and culturally diverse markets and workforces.

492. Hospitality Managerial Finance
Fall, Spring, Summer. 3(3-0)
P: FI 311. R: Open only to seniors. Cash flow determination and management. Strategies for financing hospitality ventures and expansion. Determining financial viability of proposed and existing operations.

485. Advanced Foodservice Management
Fall, Spring, Summer. 3(1-4)
P: HB 302, HB 307, HB 345. R: Open only to seniors in Hospitality Business. Beverage management and dining room service. Guest relations and current management topics. Emphasis on foodservice team projects.

490. Policy Issues in Hospitality Management
Fall, Spring. 3(3-0)
P: HR 482, HB 454. R: Open only to seniors in Hospitality Business. Not open to students with credit in MOT 409. Management problems and issues in the hospitality industry. Focus on decision-making models. Case study analysis, discussion and written reports.

490. Independent Study
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to graduate students in the College of Business. Approval of school. Faculty-supervised independent study.

HUMAN ECOLOGY HEC
College of Human Ecology

201. The Human Ecological Perspective
Fall, Spring. 3(3-0)

290. Independent Study
Fall, Spring. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to students in the College of Human Ecology. Individual study of interdisciplinary topics related to the human ecology perspective under the guidance of a faculty member.

A-97