

**Descriptions — Horticulture  
of  
Courses**

**452. Warm Season Vegetables**  
Spring, 3(3-0) HRT 101, BOT 301, CSS 210.

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

**453. Warm Season Vegetables Laboratory**  
Spring, 1(0-2) HRT 452 or concurrently.

Identification of seeds and plants and factors affecting germination, sex expression, premature flowering, bulb and tuber formation.

**456. Cool Season Vegetables**  
Fall, 3(3-0) HRT 101, BOT 301, CSS 210.

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

**457. Cool Season Vegetables Laboratory**  
Fall, 1(0-2) HRT 456 or concurrently.

Mineral nutrition, fertilizer placement and sources, herbicide action, weed competition, plant identification and post-harvest conditions for vegetables.

**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.

**810. Seminar**  
Fall, Winter, 1(0-1)

**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**  
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.

**821. Genetic Concepts in Plant Breeding**  
Fall, 3(3-0) CSS 250 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.

**822. Plant Breeding Systems**  
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.

**823. Plant Breeding Methods**  
Spring, 3(3-0) HRT 822, STT 423. 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.

**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**  
Fall, Winter, Spring, Summer, 1 to 4 credits. May reenroll for a maximum of 12 credits if different topic is taken. Approval of department.

**836. Evolution of Crop Plants**  
Spring of odd-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.

**844. Plant Organelle Genetics**  
Winter of odd-numbered years, 3(3-0) Approval of department. Interdepartmental with Genetics and the departments of Botany and Plant Pathology, Crop and Soil Sciences, and Forestry.

Organization, structure, function, heredity, molecular biology and manipulation of chloroplasts and mitochondria. Biological interactions between the nucleus and organelles.

**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 of even-numbered years, 4(4-0) MTH 113, STT 422, CSS 821. 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, 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 the Service Industries**  
Fall, 3(3-0) Not open to Seniors.

Management careers and opportunities in hotel, motel, food service, health facilities, club, recreational centers, tourism and other public hospitality businesses. Includes front office practice. Local field trip required.

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

- 203. Service Industry Accounting**  
Fall, Spring. 4(4-0) ACC 202; not open to Seniors.  
Principles of accounting applied to service industries. Financial statement analysis and cash flow concepts. Managerial accounting emphasized.
- 237. Management of Lodging Facilities**  
Fall, Winter, Spring. 4(4-0) Sophomore majors.  
An analysis of the guest cycle through examination of various operating departments within a hotel. Functions of revenue and nonrevenue departments with emphasis on managing departmental interrelationships.
- 245. Food Production Science**  
Fall, Spring. 4(4-0) HNF 100.  
Interrelationships of the physical, biological and chemical principles relevant to the food service industry.
- 252. Professional Experience I**  
Fall, Winter, Spring, Summer. 1 credit. Approval of school.  
A written report based on prior 400 hours of approved professional work experience in the hospitality industry.
- 261. Dimensions of Tourism**  
Fall, Winter, Spring, Summer of odd-numbered years. 4(4-0) EC 201 or concurrently; not open to Seniors.  
Forces which influence the international and domestic hospitality, leisure, travel and recreation industries. Socio-economic models and measurement of regional impact, demand and supply.
- 265. Food Production Standards**  
Fall, Spring. 4(4-0) HRI 245.  
Interrelationships of the environmental, microbiological and physiological principles relevant to the food service industry.
- 307. Supervision in the Hospitality Industry**  
Fall, Winter, Spring, Summer of even-numbered years. 4(4-0) HRI 237, MGT 302.  
The direction of people at work in the hospitality industry. Special applications of supervisory management skills in hotels, restaurants and other hospitality industry establishments.
- 335. Service Industries Equipment and Utilities**  
Fall, Winter, Summer of even-numbered years. 4(4-0) MTH 108 or MTH 111; HRI 237.  
Engineering in food and lodging industry, emphasizing utilities, machinery characteristics and environment.
- 337. Management Systems for the Hospitality Industry**  
Winter, Spring, Summer of even-numbered years. 4(4-0) CPS 110, EC 200.  
Evaluation and appraisal of management systems currently in use and the development of new management systems for the hospitality industry.
- 353. Professional Experience II**  
Fall, Winter, Spring, Summer. 1 credit. HRI 252, approval of school. Must be completed before enrollment for final term of the senior year.  
A written report based on prior 400 hours of approved professional work experience in the hospitality industry.
- 375. Marketing of Hospitality and Travel Services**  
Fall, Winter, Spring, Summer. 4(4-0)  
Applications of marketing concepts, methods and techniques in the hospitality and travel sector. Uses and limitations of various promotional forces such as advertising, field selling, merchandising, sales promotion, and in-house selling.
- 392. Managerial Finance for the Hospitality Industry**  
Fall, Winter, Spring. 4(4-0) F I 391, HRI 203.  
Basic financial concepts applied to the hospitality management industry. Methods of expansion; franchises, condominiums, leases and management contracts. Financial aspects of feasibility studies. Financial ratios specific to the hospitality industry.
- 405. Food and Beverage Management**  
Winter, Spring, Summer of even-numbered years. 4(4-0) HRI 265, HRI 203.  
Duties and responsibilities of the manager in restaurant and catering operations. Management methods in goal setting, forecasting, controlling quality and costs; establishing policies to create favorable acceptance and profitable operations.
- 435. Food Production Systems**  
Fall, Winter, Spring, Summer of even-numbered years. 6(4-6) FSC 242, HRI 405.  
Recognition and achievement of quality in development of systematic relationships between menu items, time, labor, equipment and costs in quantity food production. Quality procurement policies for food, beverages and related items. Field trips required.
- 455A. Food Evaluation**  
Spring. 4(4-0) Approval of school.  
History of foods and related physiological and psychological theories and their application to quality consideration.
- 455B. Beverage Evaluation**  
Fall. 4(4-0) Approval of school.  
History of beverages and related physiological and psychological theories and their application to quality considerations.
- 462. Tourism Management**  
Winter. 4(4-0) HRI 261.  
Tourism organizations, functions, and policy determination, tour wholesaling and retail travel agency management. Field trip required.
- 463. Tourism Distribution Management**  
Fall. 4(4-0) HRI 261.  
Component channels of the tourism distribution system. Functional interrelationships of these channels with emphasis on increasing distribution effectiveness. Field trips required.
- 466. Tourism Planning and Development**  
Fall, Spring. 4(4-0) HRI 261.  
Tourism resource characteristics, location, and market demand considerations. Analysis of development potential, planning processes and procedures, capital and personnel requirements, and tourism destination developments.
- 472. Design and Layout**  
Winter, Spring. 4(4-0) HRI 335.  
Conceptualization, design, layout and specification of service industry facilities.
- 473. Operations Research in the Service Industries**  
Fall, Spring, Summer of odd-numbered years. 4(4-0) HRI 337, MTA 317.  
Application of marketing and operational research techniques to service industry management problems, emphasizing quantitative and analytical decision models designed for specific operations in this field.
- 475. Promotion of Hospitality Services**  
Fall, Winter, Spring, Summer of odd-numbered years. 4(4-0) HRI 375.  
Advertising, personal selling, sales promotion, merchandising, public relations, and publicity to compete effectively for individual and group sales in the hospitality industry.
- 490. Operational Analysis in the Hospitality Industry**  
Fall, Spring. 4(4-0) HRI 405, 800 hours work experience requirement. HRI majors only.  
Advanced management concepts, leading to an understanding of decision theory as applied to directed investigation into specific hospitality operations.
- 499. Independent Study**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits. Majors and approval of school.  
Research in any phase of food, lodging, hospitality, tourism or health facilities operations.
- 805. Advanced Foodservice Management**  
Winter. 4(4-0) HRI 435.  
Administrative and technical management of foodservices. Emphasis on operation analysis and problem solving.
- 807. Workforce Management in the Hospitality Industry**  
Spring. 4(4-0) HRI 337.  
Developing and maintaining a productive workforce for hospitality firms. Emphasis on supervisory skills and labor relations.
- 835. Energy Management in Hospitality Facilities**  
Fall. 4(4-0)  
Achieving energy efficiency through system analysis and design. Includes energy audits and design problems.
- 837. Advanced Lodging Management**  
Spring. 4(4-0) HRI 337.  
Administrative and technical management of hotels. Emphasis on operations and analysis and problem solving.
- 875. Innovation in Hospitality Marketing**  
Spring. 4(4-0) MTA 805 or concurrently.  
Application of marketing concepts to the hospitality sector, with special emphasis on the role of promotion in the hospitality marketing process.
- 888. Financial Management for the Service Industries**  
Winter. 4(4-0) ACC 840.  
Preparation and interpretation of financial statements, budget preparation and analysis of budgetary variances. Financial aspects of hospitality business expansion, franchising contracts, feasibility studies, and valuation considerations.

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

**890. Special Problems**  
Fall, Winter, Spring, Summer. 1 to 15 credits. Approval of school.  
Opportunity for outstanding students to engage in a thorough analysis of a service industry area of their choice that will result in a positive contribution to the field.

**HUMAN ECOLOGY HEC  
(COLLEGE OF)**

**201. Perspectives in Human Ecology**  
(F E 110.) Fall, Winter. 3(3-0) Sophomores.  
Introduction to the study of families from a human ecological perspective. Development of the profession of human ecology. Analysis of issues affecting families. Interdepartmental emphasis.

**HUMAN ENVIRONMENT AND DESIGN HED**

**College of Human Ecology**

**143. Design for Living I**  
Fall, Winter, Spring. 3(3-0)  
Perceptual development including analytical judgement through the study of design, a vital part of the matrix of living. Design components and principles as they relate to the function and ideas in the various phases of human environment and daily life.

**144. Design for Living II**  
Fall, Spring. 3(1-4) HED 143.  
Use of design elements and application of principles in creative problems and media.

**155. Clothing Construction Studio**  
(HED 152.) Fall, Winter, Spring. 3(1-4)  
Emphasis on fit, alterations, different techniques in assembling apparel. Basic principles of clothing construction. Completed garments required.

**171. Textiles for Consumers**  
Fall, Winter, Spring. 4(4-0)  
A programmed sequence develops decision-making abilities in the selection of textile alternatives for various uses. Consumer-oriented concepts of durability, comfort, care and aesthetic appearance are used to evaluate products.

**201. Contemporary Merchandising Management**  
Fall, Winter, Spring. 3(3-0) Sophomores.  
Merchandisers supplying goods and services for consumer needs.

**203. Selected Non-Textile and Apparel Merchandise**  
Winter, Spring. 3(3-0) HED 143.  
Selected non-textile and apparel merchandise as it fulfills consumer needs and expectations.

**215. Interior Environments**  
Fall, Winter. 3(3-0) Spring, Summer. 3 credits; credit by examination only. HED 144, sophomores or approval of department. Students may not receive credit in both HED 215, and HED 210, HED 213.  
Design fundamentals as they relate to interior design and human behavior. Characteristics of interior design, finishing materials and artifacts.

**216. Interior Environments: Studio**  
Fall, Winter, Spring. 3(0-6) HED 215 or concurrently. Students may not receive credit in both HED 216 and HED 211, HED 214.  
Application of design fundamentals.

**220. Interior Space Design**  
Fall, Winter. 3(0-6) HED 215, HED 216 or concurrently.  
Basic designing and drawing of interior space in relationship to human needs.

**221. Interior Color and Texture Design**  
Winter, Spring. 3(0-6) HED 220.  
The manipulation and development of color and texture as components of environmental space design.

**223. Interior Design Synthesis I**  
(222.) Fall, Spring. 3(0-6) HED 221.  
Experimentation and representation of space, color and texture as they relate to environmental interior design.

**239. Housing Conservation**  
Spring. 3(3-0) Interdepartmental with and administered by Building Construction Management.  
Skills and techniques in conserving, repairing and remodeling existing housing. Structural components of housing and evaluation of housing structure.

**251. Aesthetics of Dress**  
(HED 254.) Winter, Spring. 3(3-0) HED 143 or approval of department.  
Analysis of clothing as an aesthetic expression. Emphasis on design principles as they apply to costume.

**253. Costume Design Studio**  
(HED 353.) Spring. 3(0-6) HED 143; HED 251 or concurrently.  
Execution, illustration and critique of functional, structural, and decorative clothing designs. Studio experience.

**255. Advanced Clothing Construction Studio**  
(HED 252.) Fall, Winter. 3(2-2) HED 155 or pass placement exam and review.  
Application of principles of clothing construction with emphasis on fitting, alteration and couture construction techniques. Experimental execution and evaluation of techniques.

**290. Portfolio Development: Independent Study**  
Fall. 3 to 6 credits. May reenroll for a maximum of 6 credits. STA 141, HED 251, HED 253.  
Supervised independent study aimed at the development of a portfolio of clothing designs.

**302. Clothing and Textiles Production and Distribution**  
(402.) Fall, Winter. 3(3-0) Juniors.  
Historical development of the foreign and domestic apparel industries. Present organization of the apparel industry in major foreign markets and primary and regional markets in the United States.

**303. Interior Design Construction Components**  
Spring. 3(2-2) HED 220 or approval of department.  
Characteristics of materials and structural systems, methods of construction, and social and legal constraints as they affect human needs in interiors. Field trip required.

**310. Interior Design Material and Workroom Practices**  
(320.) Fall. 3(2-2) HED 223 or approval of department. Junior Interior Design majors.  
The material used to create design in near-environment space and the workroom practices used to accomplish an installation after it has been designed.

**311. Interior Perspective and Media**  
(324.) Fall. 3(0-6) HED 223.  
The development of methods for design communication through manipulation of three-dimensional drawings in many media.

**312. Interior Design Lighting and Environmental Systems**  
(322.) Winter. 3(2-2) HED 223.  
Lighting and environmental systems as related to interior design. Systems include light, ventilation, acoustics, heating and cooling and their integration with interior space. Field trip required.

**313. Interior Design—Human Dimensions**  
Winter. 3(2-2) HED 310, HED 311 or approval of department.  
Human dimensions as determining factors in human environments and their design.

**314. Contemporary Design Problems**  
Winter. 3(3-0) Juniors.  
Current and controversial issues perceived as important to future designs or designers.

**316. Interior Design Synthesis II**  
(326.) Spring. 3(0-6) HED 312, HED 313, Junior Interior Design majors.  
Application of problem solving process to situations brought by clients.

**332. Human Needs in Housing**  
Fall, Winter, Spring. 3(3-0)  
Near environment studied as a determinant of individual and family development. Content and discussions focus on interpreting human-environmental relations for the plan and design of housing.

**355. Design Analysis: Flat Pattern**  
Fall. 4(2-4) HED 255.  
Emphasis on flat pattern techniques necessary to develop garment design from basic patterns.

**360. Merchandising I: Apparel and Home Furnishing Accessories**  
Winter, Spring. 4(4-0) HED 201, MTA 351, ACC 201 or ACC 230.  
Decision-making application to the merchandising function. Merchandising mathematics: methods, procedures, and planning of merchandising budgets. Analysis of management information as provided by electronic data processing and other sources.