402. Principles of Weed Control for Horticultural Crops
Fall, 4(3-2) CEM 122, BOT 301.
Principles underlying weed control practices for horticultural crops. Factors involved in mechanical, chemical and biological control.

408. Principles of Plant Breeding
Winter, 4(3-2) CSS 250. 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
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. Tree Crop Flower and Fruit Physiology
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
Spring, 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, BOT 301 or BOT 302. Control of greenhouse environment and its effect on growth and production of horticultural crops.

418. Controlled Plant Environment Laboratory
Fall, 3(3-0) HRT 417 or concurrently. Experiments in the morphology and physiology of greenhouse crops. Crop production and the use of greenhouse equipment.

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

433. Commercial Bedding Plant Production
Spring of odd-numbered years, 4(3-2) HRT 417, HRT 418, HRT 434. 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.

501. 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.

507. Physiology of Horticultural Crops I
Fall, 4(3-2) BOT 415. Physiology and biochemistry of horticultural crops; morphological aspects and techniques of horticultural crops; sex expression and seed production.

508. Physiology of Horticultural Crops II
Winter, 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.

509. Physiology of Horticultural Crops III
Spring, 4(3-2) BOT 415. Physiology of abscission, winter hardiness, water and nutrient relations, crop productivity and problems concerned with crop production.

510. Seminar
Fall, Winter, 1(0-1)
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**  
  Winter. 4(4-0) EC 201 or concurrently.  
  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**  
  (233) 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**  
  Fall, Winter, Summer of even-numbered years. 4(4-0) CPS 110, EC 206.  
  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. 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) AFA 391, HRI 295.  
  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 205, 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. 4(4-0) 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 organization, 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. Functions and relationships 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 specifications 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 the solution of 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. Major and approval of school.  
  Research in any phase of food, lodging, hospitality, tourism or health facilities operations.  

505. **Advanced Foodservice Management**  
  Winter. 4(4-0) HRI 435.  
  Administrative and technical management of foodservices. Emphasis on operation analysis and problem solving.  

507. **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.  

535. **Energy Management in Hospitality Facilities**  
  Fall. 4(4-0)  
  Achieving energy efficiency through system analysis and design. Includes energy audits and design problems.  

537. **Advanced Lodging Management**  
  Spring. 4(4-0) HRI 337.  
  Administrative and technical management of hotels. Emphasis on operations analysis and problem solving.  

561. **Advanced Travel and Tourism Management**  
  Fall. 4(4-0) EC 860 or concurrently.  
  Tourism as a national and international generator of demand for hospitality services. Social and economic impact of tourism on destination areas.  

875. **Innovation in Hospitality Marketing**  
  Spring. 4(4-0) MTH 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) AFA 440.  
  Administration of financial statements, budget preparation and analysis of budgetary variances. Financial aspects of hospitality business expansion, franchising contracts, feasibility studies, and valuation considerations.
**HUMAN ECOLOGY**

**HEC**

**COLLEGE OF**

**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 man's environment and daily life.

**144. Design for Living II**

Fall, Winter, Spring, 3(1-4) HED 143.

Use of design elements and application of principles in creative problems and media.

**152. Principles of Clothing Construction**

Fall, Winter, Spring, 3(2-2)

Principles of clothing construction related to fit, fabric and garment assembling.

**171. Textiles for Consumers**

Fall, Winter, Spring, 4(3-0)

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 Retail Community**

Fall, Winter, Spring, 3(3-0) Sophomores.

The retail community as it responds with a supply of goods and services to the needs of the consumer.

**203. Selected Non-Textile and Apparel Merchandise**

Winter, Spring, 3(3-0) HED 142.

Selected non-textile and apparel merchandise as it fulfills consumer needs and expectations.

**210. Environmental Design: Space, Color and Texture**

Fall, Winter, 3(3-0) HED 144 or approval of department.

Space, color and texture as components of human environment, their effect upon and by man.

**211. Environmental Design: Space, Color and Texture – Laboratory**

Fall, Winter, 2(2-0) HED 210 concurrently.

Discussion and demonstration of space, color and texture as components of man's environment, their effect upon and by man.

**213. Synthesis of Environmental Design Elements**

Winter, Spring, 3(2-0) HED 210.

The synthesis of design elements, space, shape, color and texture, and their organization as they are related to man's near environment.

**214. Synthesis of Environmental Design Elements – Laboratory**

Winter, Spring, 2(2-0) HED 213 concurrently.

Discussion and demonstration of design elements, space, shape, color and texture, and their organization as they are related to man's near environment.

**220. Interior Space Design**

Fall, Winter, 3(0-6) HED 210 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 or concurrently.

The manipulation and development of color and texture as components of environmental space design.

**222. Basic Interior Design Synthesis**

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 Agricultural Engineering Technology.

Skills and techniques in conserving, repairing and remodeling existing housing. Structural components of housing and evaluation of housing structure.

**252. Experimental Clothing Construction**

Winter, Spring, 3(2-2) HED 152 or pass departmental placement examination.

Application of principles of clothing construction with emphasis on fitting, alteration and couturier construction techniques. Experimental execution and evaluation of techniques.

**254. Contemporary Fashion Analysis**

Fall, Winter, Spring, 3(3-2) HED 143 or approval of department.

Analysis of fashion as evidence of a dynamic relationship between man and his environment; costume as an aesthetic expression, a sociological phenomenon, and a coordinating factor for the consumer market.

**256. Survey of World Dress**

Fall, Winter, Spring, 3(3-0)

Clothing and its relationship to the physical body; to aesthetic interests of humans; and to societal type. Concepts amplified through cross-cultural case studies.

**302. Clothing and Textiles**

**Production and Distribution**

(4/6) 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.

**320. Interior Design Material and Workroom Practices**

Fall, Spring, 3(2-3) HED 221, approval of department.

The basic principles and practices of interior design lighting, light control, distribution, quality and quantity of light as it affects our near environment.

**324. Interior Perspective and Media**

Fall, Winter, Spring, 3(0-10) HED 222 or approval of department. Junior Interior Design majors.

The development of methods for design communication through manipulation of three-dimensional drawings in many media.

**326. Interior Design Problems**

Winter, Spring, 3(0-6) May reenroll for a maximum of 3 credits. HED 324 or approval of department. Junior Interior Design majors.

Research and analysis of design systems through a broad choice of projects with a strong emphasis on independent development.

**331. History of Interior Design: Ancient to Rococo**

(330) Fall, 3(3-0) Approval of department.

Historical development of furniture, textiles, and other decorative arts in relation to interior architecture from ancient times to Rococo.

**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.

**353. Design Illustration**

Fall, Spring, 3(0-6) HED 143, HED 222 or HED 234, or approval of department.

Development and display of design ideas through visual means. Exercises intended to stimulate design perception and creativity in design illustration. Survey of philosophies as related to design innovation.

**355. Design Analysis: Flat Pattern**

Fall, 3(2-2) HED 252 or approval of department.

Garment design achieved by flat pattern methods. Problems include fitting a master pattern, designing from a block, pattern cutting and garment construction.