

- 411. Fruit and Landscape Crop Physiology I**  
*Fall. 4(3-2) Juniors.*  
Physiological effects of moisture and nutritional environments related to fruit crops and woody perennial plants.
- 412. Fruit and Landscape Crop Physiology II**  
*Winter of odd-numbered years. 3(3-0) Juniors, BOT 301, not open to students with credit in HRT 807 or HRT 808.*  
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. 4(4-0) 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) BOT 301 or BOT 414.*  
Control of greenhouse environment and its effect on growth and production of horticultural crops.
- 418. Controlled Plant Environment Laboratory**  
*Fall. 1(0-2) 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) Juniors.*  
Commercial production culture, utilization and physiology of strawberries, grapes, blueberries and raspberries.
- 424. Pesticide and Growth Regulating Chemicals for Horticultural Crops**  
*Spring. 3(2-2) Juniors.*  
Spray and dust equipment and application; pesticide and growth regulating chemicals, their use in the growing of horticultural crops, and influence on the physiology of the plant.
- 433. Greenhouse Cut Flower Production**  
*Winter of even-numbered years. 4(3-2) May reenroll for a maximum of 8 credits. HRT 417 or approval of department.*  
Principles of flower crop physiology; includes control of environmental conditions, and emphasizes the management of cut flower production.
- 434. Greenhouse Container-Grown Plant Production**  
*Winter of odd-numbered years. 4(3-2) HRT 417 or approval of department.*  
Principles of flower crop physiology; includes control of environmental conditions and emphasizes the management of container-grown plant production.
- 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.

- 452. Warm Season Vegetables**  
*Spring. 3(3-0) 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, permature flowering, bulb and tuber formation.
- 456. Cool Season Vegetables**  
*Fall. 3(3-0) 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.
- 807. Physiology of Horticultural Crops I**  
*Fall. 4(3-2) BOT 415.*  
Physiology and biochemistry of bulbous crops; morphological aspects and techniques of horticultural crops; sex expression and seed production.
- 808. 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.
- 809. 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.
- 810. Seminar**  
*Fall, Winter. 1(0-1)*
- 825. Post Harvest Physiology**  
*Spring. 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. Variable credit. 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.*

- 899. Research**  
*Fall, Winter, Spring, Summer. Variable credit. Approval of department.*
- 951. Cytogenetics in Plant Breeding**  
*Winter of odd-numbered years. 3(3-0) BOT 427, BOT 828, or approval of department. Interdepartmental with and administered by the Department of Crop and Soil Sciences.*  
Application of cytogenetic principles to plant breeding. Significance of recombination, role of induced mutations, polyploid, chromosome substitution, and aneuploid analyses as they apply to the field of plant breeding.
- 999. Research**  
*Fall, Winter, Spring, Summer. Variable credit. Approval of department.*

## **HOTEL, RESTAURANT AND INSTITUTIONAL MANAGEMENT HRI**

### **College of Business**

- 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.
- 235. Service Industries Equipment and Utilities**  
*Fall, Winter, Summer of even-numbered years. 4(4-0) MTH 108 or MTH 111. Not open to Seniors.*  
Engineering in food and lodging industry, emphasizing utilities, machinery characteristics and environment.
- 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.
- 261. Dimensions of Tourism**  
*Fall, Winter, 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.
- 303. Service Industry Accounting**  
*Fall, Spring. 4(4-0) AFA 391 or concurrently; not open to Seniors.*  
Principles of accounting applied to service industries. Financial statement analysis and cash flow concepts. Managerial accounting emphasized.

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

**305. Lodging Management I**  
Fall, Winter, Summer of even-numbered years. 4(4-0) MGT 302.  
Ethics and policies. Organization and manpower planning and development. Employee compensation and benefits as they apply to hospitality organization.

**306. Lodging Management II**  
Winter, Spring, Summer of even-numbered years. 4(4-0) HRI 305.  
Continuation of HRI 305. Supervision and activation of employees with emphasis on human relations, collective bargaining, negotiations and operating under the contract.

**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.

**350. Work Analysis and Design**  
Fall, Winter, Summer of odd-numbered years. 4(4-0) HRI 235.  
Work methods and layout. Includes flow analysis, time and motion study, work simplification, data processing and setting of standards.

**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.

**405. Food and Beverage Management**  
Winter, Spring, Summer of even-numbered years. 4(4-0) HRI 265, HRI 303, HRI 306.  
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**  
Winter. 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 350.  
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, STT 316.  
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.

**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.

**811. Policy Formulation and Organization**  
Spring. 4(4-0) HRI 875, HRI 888; MGT 806.  
Development of goals, objectives and consistent business policies for the creation of dynamic and effective organizations for all phases of service industries.

**861. Economic Implications of Tourism**  
Fall. 4(4-0) EC 860 or concurrently.  
Economic, historical, philosophical, psychological, governmental and educational aspects and satisfactions of travel. The promotion of tourism; the business of travel and its relationships to the hospitality industry.

**875. Innovation in Hospitality Marketing**  
Spring. 4(4-0) MTA 805 or concurrently.  
Changing environment of the hospitality industry is examined and new developments in marketing are analyzed for potential innovative application in the hospitality sector.

**888. Financial Management for the Service Industries**  
Winter. 4(4-0) AFA 840.  
Covers leasing, franchising, tax considerations, planning to meet financial needs from internal sources or from capital markets, management of current and capital assets, including inventories and operational equipment.

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

**896. Problems of the Service Industries**  
Winter. 4(4-0) HRI 888 or concurrently.  
Formulation of plans based on analysis of situations and trends applying general business principles. Discussion of actual cases with leaders in service industries.

**898. Facilities Programming**  
Fall. 4(4-0)  
Application of principles and concepts drawn from many related disciplines to planning and operation of housing and food production systems, utilizing optimum physical and human resources.

**HUMAN ECOLOGY HEC  
(College of)**

**201. Family in Its Near Environment**  
Fall, Winter, Spring, Summer of odd-numbered years. 3(3-0) Basic courses at freshman level in college required in each major.  
Foundations of human ecology are explored using conceptual frameworks of family as ecosystem and human development. Interrelationships of ecosystems which focus on families are examined.

**301. Management and Decision Making in the Family**  
(FE 331.) Fall, Winter, Spring, Summer of even-numbered years. 3(3-0) HEC 201.  
Presentation of the integrated nature of home management; concerns, values, and goals as reflected in decision making about family resources.

**401. Human Ecological Approach to Contemporary Issues**  
(F E 401.) Fall, Winter, Spring, Summer. 3(3-0) HEC 201, HEC 301.  
Establishment of interrelationships among the human ecological professions as each profession identifies meaningful but different approaches to issues.

**HUMAN DEVELOPMENT H D  
College of Human Medicine**

**520. Genetics Clinic**  
Fall, Winter, Spring, Summer. 1 to 3 credits. My reenroll for a maximum of 9 credits.  
Students will interview and examine patients with inheritable disorders, perform related laboratory diagnostic procedures, and participate in genetic counseling conferences and discussions.