

**402. Principles of Weed Control**

Fall. 3(2-2) Juniors. Interdepartmental and administered jointly with Crop Science.

Comprehensive study of principles underlying weed control practices, and factors involved in both mechanical and chemical control.

**408. Principles of Plant Breeding**

Spring. 4(3-2) CSC 250. Interdepartmental and administered jointly with Crop Science.

Application of genetics and other sciences to breeding and improvement of agronomic and horticultural crops.

**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. 4(3-2) Juniors.

Physiology of flowering and fruit development in woody plants.

**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. 4(2-4) BOT 301 or 414.

Control of greenhouse environment and its effect on growth and production of horticultural crops.

**419. Small Fruits**

Winter. 3(3-0) Juniors.

Production, culture, utilization and physiology of strawberries, grapes, blueberries and raspberries.

**421. Principles of Plant Propagation**

Winter. 4(3-2) Juniors.

Principles of plant propagation by seed, cutting, layerage, and graftage; scion and stock relationship; stocks for fruit and ornamental plants; practices employed by nurseries in propagation of plants.

**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.

**432. Vegetable Crop Physiology**

Spring. 4(3-2) May re-enroll for a maximum of 8 credits. Juniors.

Physiological principles involved in and related to the production of high quality vegetables.

**433. Greenhouse Cut Flower Production**

Winter of even-numbered years. 4(3-2) May re-enroll for a maximum of 8 credits.

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) 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 of even-numbered years. 3(2-2)

Management practices employed by wholesale, retail and landscape nurseries. Field trips to nurseries required.

**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 Horticulture Crops I**

Fall. 4(3-2) BOT 415.

Physiology of plant organs and tissue development, sexual reproduction, rooting, bulb growth and development and grafting of horticultural crops.

**808. Physiology of Horticultural Crops II**

Winter. 4(3-2) BOT 415.

Physiology of juvenility, flowering and fruiting of herbaceous and woody plants, senescence and bud and seed dormancy as related to horticultural crops.

**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. Advanced Horticultural Studies**

Fall, Winter, Spring, Summer. Variable credit. 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, 828, or approval of department. Interdepartmental with and administered by Crop Science.

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)

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**

(335.) Fall, Winter. Summer of even-numbered years. 4(4-0) MTH 108.

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.

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) 245; HNF 100.

Interrelationships of the environmental, microbiological and physiological principles relevant to the food service industry.

**303. Service Industry Accounting**

(203A., 203.) Fall, Winter. 4(4-0) AFA 202, 391.

Principles of accounting applied to service industries. Financial statement analysis and cash flow concepts. Managerial accounting emphasized.

**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) 305.

Continuation of 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) MGT 302 and Juniors.

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**

(350A.) Fall, Winter. Summer of odd-numbered years. 4(4-0).

Work methods and layout. Includes flow analysis, time and motion study, work simplification, data processing and setting of standards.

**375. Marketing of Hospitality Service**  
(375A., 375B.) Fall, Spring, Summer.  
4(4-0)

Applications of marketing concepts and techniques to businesses in the hospitality 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**  
(447.) Winter, Spring, Summer of  
odd-numbered years. 4(4-0) 303, 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 operation.

**435. Food Production Systems**  
(345.) Fall, Spring, Summer of even-  
numbered years. 6(4-6) 405, 472.

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.

**448. Passenger Transportation Systems**  
Winter. 4(4-0) Interdepartmental with  
and administered by the Marketing and Transportation Administration Department.

Composition and objectives of principal passenger travel markets; Analysis of carrier service, pricing and promotional practices and problems, competitive and cooperative relations. Review of major proposals for change and expansion of service systems.

**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**  
Winter. 4(4-0) Approval of school.

History of beverages and related physiological and psychological theories and their application to quality considerations.

**461. Tourism Principles and Practices**  
Winter, Summer of odd-numbered  
years. 4(4-0) EC 200 or 201.

Evolution of tourism as an industry, correlation theory of tourism, tourism organizations, planning and development. Field trip required.

**466. Tourism Planning and  
Development**  
Fall, Spring. 4(4-0) 261 or 461 or  
448.

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)

Conceptualization, design, layout and specification of service industry facilities.

**473. Operations Research in the  
Service Industries**  
Fall, Spring, Summer of odd-numbered  
years. 4(3-0) 305; MTA 318.

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) 306; Seniors.

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(1-0)  
to 15(1-0) May re-enroll for a maximum of 15  
credits. 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) 875, 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 con-  
currently.

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) 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 DEVELOPMENT H D**  
College of Human Medicine

**520. Genetics Clinic**  
Fall, Winter, Spring, Summer. 1 to 3  
credits. May re-enroll 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.

**590. Special Problems in Human  
Development**  
Fall, Winter, Spring, Summer. 1 to 6  
credits. May re-enroll for a maximum of 12  
credits. Human medicine students.

Each student will work under direction of a staff member on an experimental, theoretical or applied problem.

**608. Pediatric Specialty Clerkship**  
Fall, Winter, Spring, Summer. 1 to  
17 credits. May re-enroll for a maximum of 43  
credits. HM 503; primary clerkship.

Clinical experience with pediatric patients under the direction of members of the faculty of the Department of Human Development and community pediatricians. Fall, Saginaw. Winter, Lansing. Spring, Grand Rapids. Summer, Flint.

**609. Human Development and  
Pediatric Sub-Specialties**  
Fall, Winter, Spring, Summer. 1 to  
17 credits. May re-enroll for a maximum of  
34 credits. H M 602.

Elected experiences in selected clinical and basic sciences related to pediatrics and human development.

**HUMAN ENVIRONMENT  
AND DESIGN HED**

College of Human Ecology †

**143. Design for Living I**  
(140, TRA 140.) Fall, Winter, Spring.  
3(3-0).

Perceptual development including analytical judgment 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) 143.

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

**152. Principles of Clothing  
Construction**  
(TRA 152.) 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**  
(TRA 201.) 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.

†Name changed July 1, 1970. Formerly College of Home Economics.