325. *Ornamental Plant Management*
Spring. 4(3-2) 211 or 212.

Transplanting and maintenance of landscape plants subject to stresses of urban environment. Development of annual maintenance specifications. Identification and evaluation of herbaceous annuals, biennials and perennials for landscape.

330. *Special Topics in Horticulture*
Fall, Winter, Spring, Summer. 1 to 9 credits. May re-enroll for a maximum of 18 credits. Approval of department.

Special studies: independent research, floral design, retail flower store and greenhouse management, and horticultural therapy.

350. *Floral Design*
Spring. 2(0-4) Junior majors and approval of department.

Principles of floral design and the care and handling of materials. Creation of corsages, terraria, tropical planters, and home, hospital and novelty arrangements.

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. 3(3-0) BOT 301 or 414.

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

418. *Controlled Plant Environment Laboratory*
Fall. 1(0-2) 417 or concurrently.

Experiments in the morphology and physiology of greenhouse crops. Crop production and the use of greenhouse equipment.

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, cuttage, 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) 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. 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, Spring. 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

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

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

Fall, Winter, 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

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)

Tourism organizations, functions, and policy determination, tour wholesaling and retail travel agency management. Field trip required.

466. Tourism Planning and Development

Fall, Spring. 4(4-0) 261 or 375 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(4-0) 305; MTA 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) 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 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) 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. H M 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.