928. Seminar in American History
Fall, Winter, Spring. 5 credits.

931. Seminar in African History
Fall, Winter, Spring. 5 credits.

932. Seminar in Asian History
Fall, Winter, Spring. 5 credits.

933. Seminar in the History of International Relations
Fall, Winter, Spring. 5 credits.

952. Seminar in Ancient History
Fall, Winter, Spring. 5 credits.

966. Seminar in Modern European History
Fall, Winter, Spring. 5 credits.

996. The Teaching of History in College
Fall, Winter, Spring. 1 credit. May re-enroll for a maximum of 3 credits. Approval of department. Open only to teaching assistants in history.
Supervised direction in the preparation and conduct of teaching assignments.

999. Research
Fall, Winter, Spring. Variable credit. Approval of department.

HISTORY OF ART

See Art

HORTICULTURE HRT

College of Agriculture and Natural Resources

201. Fruits, Vegetables, and Ornamental Plants for Outdoor Home Plantings
Spring. 4(3-2)
Principles and practices used in producing fruits, vegetables, flowers, trees, shrubs and vines in small gardens, containers, and the home landscape. Indices for edible quality of home grown fruits and vegetables.

211. Landscape Plants I
Fall. 4(1-6)
Adaptation, identification, and evaluation of narrow-leaved evergreens, deciduous shrubs and trees, and woody vines, as they are used in the landscape. Emphasis is placed on the seasonal interest of the plants studied.

212. Landscape Plants II
Spring. 4(1-6)
Continuation of 211. Additional emphasis on the flowering characteristics of both deciduous and broad-leaved evergreen shrubs, trees and vines.

320. Commercial Fruit Production
Fall. 4(3-2) Juniors.
Commercial production of principal tree fruit crops of Michigan with emphasis on planting, soil management, fertilization, pruning, thinning, and grafting.

323. Indoor Plants and Flowers
Fall, Winter, Spring. 3(1-4) Horticulture majors will be required to learn scientific names of plants.
Identification, culture, propagation and use of plants for homes, schools, offices and public buildings; principles of flower arrangement, construction of dish gardens and hanging baskets, and the forcing of bulbs.

324. Mass Merchandising Ornamental Plants
Spring. 2(1-2) 211 or 212.
History of merchandising ornamental plants; types of garden centers, impact of cultural information and labeling on consumer. The manager, advertiser, and buyer decision making process. One day field trip required.

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 Problems
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.
Primarily independent study: culture of horticulture crops indoors and outdoors; plant propagation and breeding; plant growth and development; flower store management, floral design. Library research, working with plants, teaching, field trips or seminars.

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 the Department of Crop and Soil Sciences.
Comprehensive study of principles underlying weed control practices, and factors involved in both mechanical and chemical 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.

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.
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; selecton 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. 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) 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 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)

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.

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 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*
(447.) Winter, Spring. Summer of even-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) MTA 300 or HRI 375. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.

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*
(455.) 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*
(455.) 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.