855. The Industrial Revolution in Europe
Winter of even-numbered years. 3 credits. EC 318, 324. Interdepartmental with and administered by the Economics Department. The preconditions that led to the momentous changes in agriculture and industry in Europe from 1700-1914.

857. Readings in Renaissance and Reformation
Fall, Winter, Spring. 4 credits.

863. Readings in Early Modern European History
Fall, Winter, Spring. 4 credits.

864. Readings in Recent European History
Fall, Winter, Spring. 4 credits.

867. Readings in Russian History
Fall, Winter, Spring. 4 credits.

873. Readings in the History of International Relations
Fall, Winter, Spring. 4 credits.

894. Readings in African History
Fall, Winter, Spring. 4 credits.

897. Readings in Asian History
Fall, Winter, Spring. 4 credits.

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

913. Seminar in American Colonial History
Fall, Winter, Spring. 5 credits.

914. Seminar in the Era of the American Revolution and Constitution
Fall, Winter, Spring. 5 credits.

915. Seminar in the Age of Jackson
Fall, Winter, Spring. 5 credits.

916. Seminar in the Era of the American Civil War and Reconstruction
Fall, Winter, Spring. 5 credits.

917. Seminar in the American West
Fall, Winter, Spring. 5 credits.

918. Seminar in the Populist and Progressive Era
Fall, Winter, Spring. 5 credits.

923. Seminar in Twentieth Century American History
Fall, Winter, Spring. 5 credits.

924. Seminar in American Constitutional History
Fall, Winter, Spring. 5 credits.

925. Seminar in American Social and Intellectual History
Fall, Winter, Spring. 5 credits.

926. Seminar in American Social and Economic History
Fall, Winter, Spring. 5 credits.

927. Seminar in American Foreign Policy
Fall, Winter, Spring. 5 credits.

929. Seminar in Afro-American History
Fall, Winter, Spring. 5 credits.

930. Seminar in American Urban History
Fall, Winter, Spring. 5 credits.

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

934. Seminar in the Renaissance
Fall, Winter, Spring. 5 credits.

935. Seminar in the French Revolution and Napoleon
Fall, Winter, Spring. 5 credits.

937. Seminar in Russian History Before 1800
Fall, Winter, Spring. 5 credits.

938. Seminar in Modern Russian History
Fall, Winter, Spring. 5 credits.

939. Seminar in East European History
Fall, Winter, Spring. 5 credits.

940. Seminar in English History to 1558
Fall, Winter, Spring. 5 credits.

941. Seminar in Modern British History
Fall, Winter, Spring. 5 credits.

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

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

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

948. Seminar in Modern French History
Fall, Winter, Spring. 5 credits.

949. Seminar in Modern German History
Fall, Winter, Spring. 5 credits.

953. Seminar in European International Relations
Fall, Winter, Spring. 5 credits.

954. Seminar in West African History
Fall, Winter, Spring. 5 credits.

955. Seminar in East African History
Fall, Winter, Spring. 5 credits.

956. Seminar in China in the Traditional Period
Fall, Winter, Spring. 5 credits.

957. Seminar in Modern China
Fall, Winter, Spring. 5 credits.

958. Historical Interpretation
Fall, Winter, Spring. 1 credit. May re-enroll for a maximum of 9 credits. Approval of department. Open only to teaching assistants in history.

959. Supervised direction in preparation and conduct of a teaching assignment required of all doctoral candidates. Student will work under the direction of a regular faculty member. Doctoral candidates must enroll in these terms of this course only if required teaching assignment.

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

HISTORY OF ART
See Art

HORTICULTURE
College of Agriculture and Natural Resources

201. Fruits and Vegetables for Home and Garden
Spring. 3(2-3)
Principles and practices used in producing fruits and vegetables for the home in small gardens and containers; guidance in how to determine the edible quality of fresh fruits and vegetables.

211. Landscape Plants I
Fall. 4(1-6)
Adaptation, identification, and evaluation of narrow-leaved evergreen, 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. 5(1-4) Not open to horticulture majors.
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.

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 in fields not covered in other horticulture courses; primarily independent study.
402. Principles of Weed Control  
**Fall. 3(3-2) 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 agricultural 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, cuttage, layerage, and graftage; clone 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; pesticides and growth regulating chemicals, their use in the growing of horticultural crops, and influence on the physiology of the plant.

426. 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) 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.

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

508. Physiology of Horticultural Crops II  
**Winter. 4(3-2) BOT 415.**  
Physiology of juvenile, flowering and fruiting of herbaceous and woody plants, senescence and bud and seed dormancy as related to horticultural crops.

510. Seminar  
**Fall, Winter. 1(0-1)**

525. Post Harvest Physiology  
**Spring. 4(3-2) Bot 415.**  
Physiology of abscission, winter hardiness, water and nutrient relations, crop productivity and problems concerned with crop production.

530. Advanced Horticultural Studies  
**Fall, Winter, Spring. Variable credit. Approval of department.**

589. Research  
**Fall, Winter, Spring. Variable credit. Approval of department.**

591. Cytogenetics in Plant Breeding  
**Winter of odd-numbered years. 3(3-0) BOT 427, 829, 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, polyploids, chromosome substitution, and aneuploid analyses as they apply to the field of plant breeding.

599. Research  
**Fall, Winter, Spring. 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 practices. Local field trip required.

235. Service Industries Equipment and Utilities  
**(335.) Fall, Winter. Summer of even-numbered years. 4(4-0) MTH 109.**  
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.**  

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 202 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  
**(250.) 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.