825. Methods of Teaching Adults
(H E 825, ED 828A.) Spring of even-numbered years. 3(3-0) Approval of department.
Developmental needs of adults and changes in society affecting families as a basis for development of adult programs. Experiences will be provided with programs in progress.

826. Supervision
(H E 827, ED 837B.) Winter of odd-numbered years; Summer of even-numbered years. 3(3-0) Approval of department.
Objectives, techniques, and organization of supervising teaching in teacher education programs.

827. Evaluation
(H E 827, ED 868.) Winter, Summer. 3(3-0) Approval of department.
Evaluation procedures and practices for various levels of educational programs in the area of human ecology.

830. Individual Readings
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

831. Values and Family Behavior
Winter of even-numbered years, Summer of odd-numbered years. 4(4-0) Approval of department.
Role and function of values as fundamental to understanding behavior in the family. Cognition and actualization of values. Resolution of value conflicts. Conceptual and methodological approaches to study of values.

832. Theories of Management and Decision-Making in the Family
(FCS 832.) Winter of odd-numbered years. 4(2-1) 331.
Comparative study of conceptual frameworks of family decision-making and of interrelated decisions, including both individual and social choices.

835. Family As an Ecosytem
Fall. 3(3-0) Approval of department.
Family viewed as an ecosystem. Emphasis placed on energy and communication cycles within the family. Integration of management, family dynamics and developmental concepts.

837. Allocation of Family Resources
(FCS 837.) Spring of even-numbered years, Summer of odd-numbered years. 4(4-0) 437, 438.
Contributors to and recipients of family resources both human and non-human. Patterned use of resources and the effect of definite factors such as standard of living on these patterns.

838. Analysis of Family Income
(FCS 838.) Spring of odd-numbered years. Summer of even-numbered years. 3(3-0) 438.
Forms of family income and economic problems relative to the protection of family economic security through insurance and investment. Property rights and descent of property, and estate planning.

840. Workshops in Family Ecology
(H E 830B.) Summer. 2 to 10 credits. May re-enroll for a maximum of 10 credits. Approval of department.
Laboratory approach which provides opportunities for experienced educational personnel to concentrate their study on common professional problems.

841. Seminars in Home Economics Education
(H E 831.) Spring, Summer. 2 or 3 credits. May re-enroll for a maximum of 9 credits. Approval of department.
Seminars in selected topics.

842. Laboratory and Field Experience
(H E 832.) Fall, Spring. 4 credits. Approval of department.
Supervised graduate practitioners, observation, internships, and externships.

843. Independent Study in Family Ecology
(H E 833.) Fall, Winter, Spring. 1 to 5 credits. May re-enroll for a maximum of 9 credits. Approval of department.
Study on an individual or group basis.

901. Internship
(H E 901.) Fall, Winter, Spring. Summer. 3 to 5 credits. May re-enroll for a maximum of 9 credits. Approval of department.
Supervised advanced graduate practitioners, observation, internships, and externships in the various areas of emphasis.

902. Independent Study in Family Ecology
(H E 902.) Fall, Winter, Spring. Summer. 1 to 5 credits. May re-enroll for a maximum of 9 credits. Approval of department.
Study on an individual basis.

903. Seminars in Family Ecology
(H E 903.) Spring, Summer. 2 or 3 credits. May re-enroll for a maximum of 9 credits. Approval of department.
Seminars in selected topics.

932. History and Philosophy of Home Management
(FCS 932.) Fall. Summer of even-numbered years. 3(2-4) 632.
History and development of home management as a field of study. Values and decision-making as analyzed by various disciplines and as used in home management.

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

FAMILY MEDICINE* F M
College of Osteopathic Medicine

530. Physical Examination Skills
Fall. 2(1-2) Admission to medical school and approval of department.
Introductory course in physical examination skills used in the family physician's office. The lecture relates principles of physical examination to the laboratory where skills are taught.

328. Vertebrate Pest Control
Fall, 3(3-0) B S 212 or approval of department.
The role wild animals play as a damaging agent to man's interests; the concepts of damage and control, damage control techniques. Field trips.

340. Wildlife Biometry
Winter, 4(2-2) MTH 111, six credits in Fisheries and Wildlife.
Survey of statistical formulation, methods and applications of statistics to problems in agriculture and wildlife.

374. Biological Oceanography
Winter, 3(3-0) B S 212 or approval of department.
Biological of marine animals, with emphasis on physical, chemical and biological factors affecting their abundance and distribution.

402. Environmental Conservation Education
Fall, Winter, Spring, Summer, 3(3-2)
Education majors or approval of department.
Nature, distribution and interaction of natural resources dictating the quality of man's environment. Principles of resource use, study of natural objects and techniques of teaching in and about the environment.

404. Fisheries and Wildlife Problems
Fall, Winter, Spring, Summer, 1 to 5 credits.
May re-enroll for a maximum of 12 credits. B S 212; 6 credits of fisheries and wildlife; approval of department.
To give undergraduate majors an opportunity to study special topics in fisheries and wildlife.

420. Ecology of Animal Parasites
Summer, 6 credits. B S 212 or approval of department. Given at W. K. Kellogg Biological Station. Interdepartmental with the departments of Microbiology and Public Health and Zoology and administered by the Department of Microbiology and Public Health.
Parasitism of animals by protozoa, helminths and arthropods with emphasis on the inter-relationships of host-parasite associations with the natural environments.

424. Wildlife Population Analyses
Spring, 4(3-2) IDC 200 or approval of department.
Population measurements, reproductive and survival rates, sex and age determination, handling and marking methods.

425. Wildlife Habitat Analyses
Spring, 4(2-4) BOT 450 or ZOL 389 or IOR 320.

426. Ecology of Migratory Birds
Fall, 4(2-4) ZOL 461 or approval of department.
Ecological, behavioral, and physiological characteristics affecting population parameters of migratory birds and applications of those relationships to the management of migratory wildlife resources.

427. Wildlife Biology and Management
Winter, 4(2-4) 424; ZOL 389 or BOT 450.
Ecology and management of resident wildlife on farm, forest and range lands.

450. Natural Resource Administration
Fall, Spring, 4(4-2) Interdepartmental with Forestry, Parks and Recreation Resources and Resource Development Departments and Natural Resources. Administered by the Forestry Department.
Concepts and methods of administering wildland properties. The legal, economic and social environment, benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

471. Ichthyology
Spring, 3(2-3) 301 or ZOL 305 or 314. Interdepartmental with Zoology Department.
Classification and natural history of fishes. Emphasis on food, game, and forage fishes.

473. Fishery Biology and Management
Fall, 5(3-3) ZOL 471.
Biology of fishes with special reference to distribution and natural history, and application of this knowledge to problems of obtaining maximum return from fishery resources.

475. Fish Culture
Spring, 3(3-0) 473.
Artificial propagation of freshwater fish including hatchery management, nutritional and environmental requirements, disease and parasite control and intensive fishery management. Utilization of hatchery stock in fisheries management.

476. Limnology
Winter, 3(3-0) B S 212. Interdepartmental with the Zoology Department.
Ecology of lakes and streams with special reference to physical, chemical, and biological factors affecting their productivity.

477. Limnological Methods
Winter, 3(0-9) 476 concurrently; ZOL 481; ENT 301, 302 recommended. Interdepartmental with the Zoology Department.
Methods and instruments of limnological field investigation on lakes and streams.

484. Outdoor Environmental Education
Fall, 4(3-2) Juniors or approval of department.
Using the outdoors as a teaching laboratory for ecological studies of plant and animal communities. Designed primarily for secondary teachers.

485. Environmental Conservation Program Design
Winter, 3(3-0) Seniors or approval of department.
Materials and methods for integrating environmental conservation into educational programs in schools, nature centers, youth groups and communities.

486. Field Techniques in Environmental Conservation Education
Spring, 4(1-6) 484.
Field skills for secondary and environmental education majors, including photography, orienteering, and population investigations of flora and fauna in natural communities. Field trips required.

501. Seminar in Fisheries and Wildlife
Fall, Winter, Spring, 1(1-0)
Graduate problems and current developments of importance.