

450. Insect Physiology
Spring. 4(3-3) 441; PSL 412; 1 year of chemistry or approval of department. Comparative physiology of insects with histological and functional aspects of organs and organ systems.

460. Medical Entomology
Winter. 4(3-3) 301, 302, or approval of department. Distribution and biology of important arthropod vectors of diseases to man, disease symptoms, life cycle of the infectious agent, reservoirs, urticating arthropods, anaphylactic reactions, myiasis, and prophylactic measures.

470. Agricultural Nematology
Winter of odd-numbered years. 3(2-3) Biology, taxonomy and control of plant parasitic, insect parasitic, and saprophytic nematodes.

808. Advanced Taxonomy
Fall, Winter, Spring. 4(0-12) May re-enroll for a maximum of 24 credits. 418, 440. Classification in depth of a single order of insects, including comparative morphology of the group and survey of recent and classical literature.

811. Ecology of Aquatic Insects
Summer of every third year; given in 1969. 3 credits. 420 or approval of department. Given at W. K. Kellogg Biological Station. Aquatic insects, their physiology, distribution, and density. Preparation of energy budgets for natural populations.

820. Insect Ecology
Spring of odd-numbered years. 3(2-3) 430; BOT 450. Insects and various invertebrates in relation to their environment. Factors affecting populations, speciation and distribution. Application of basic ecological principles to integrated control measures.

830. Insect Biochemistry
Spring of even-numbered years. 5(3-6) 450; BCH 401. Energy metabolism, intermediary metabolism and the biochemistry of development in insects; stresses biochemical differences between insects and higher animals.

838. Principles of Taxonomy
Spring of odd-numbered years. 3(3-0) Twenty credits in zoology and/or entomology, or approval of department. Methods and principles of systematic zoology and entomology, including a historical survey of the pre-Linnaean and post-Linnaean systems of classification. International rules of zoological nomenclature and their emendations.

840. Insect Toxicology
Winter of odd-numbered years. 5(3-6) 301, 302; organic chemistry. Chemical and physical properties of insecticides, relationship of chemical structure to mode of action, and physiological basis of toxicological action.

860. Insects in Relation to Plant Diseases
Winter of even-numbered years. 4(2-4) 430; BOT 405. Relationships of insects, mites and nematodes to important plant diseases incited by bacteria, fungi, viruses and toxins. Mode of transmission and means of control. Transmission techniques and important plant-pathogen-insect relationships.

870. Topics in Entomology
Fall, Winter, Spring, Summer. Variable credit. Majors or approval of department. Advanced work in medical entomology, acarology, advanced forest entomology, soil arthropods, behavior and biological control.

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

940. Analytical Techniques for Bioactive Compounds
Fall. 3(1-6) Organic chemistry, approval of department. Application, extraction, cleanup and purification techniques employed in analysis of biologically active compounds. Stresses use of radioisotopes, and column, paper, thin-layer, and molecular sieve chromatography.

941. Analytical Techniques for Bioactive Compounds
Winter. 3(1-6) 940. Analytical techniques used for identification and quantitation of biologically active compounds. Emphasis on spectroscopy and gas-liquid chromatography.

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

EXTENSION PERSONNEL DEVELOPMENT EPD

College of Agriculture and Natural Resources

801. Seminar in Cooperative Extension Service
Fall, Winter, Spring, Summer. 1 to 3 credits. Approval of department.

880. Special Problems
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 6 credits. Supervised readings and independent study of selected topics varying from term to term: application of social research to extension, marketing and 4-H programs, and special problem papers.

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

FAMILY AND CHILD SCIENCES* FCS

College of Home Economics

145. Relationships in the Modern Family
Fall, Winter, Spring. 3(3-0) Freshmen or Sophomores or approval of department. Students may not receive credit in both 145 and S W 228. Family relationships throughout the life cycle. Changing nature of families in contemporary society; appraisal of attitudes and roles in family living; development of realistic patterns for courtship and marriage in an increasingly complex world.

*Name changed November 1, 1968. Formerly Home Management and Child Development.

261. Human Development in the Family
Fall, Winter, Spring. Summer of odd-numbered years. 3(3-0) Sophomores. Influences of values in a society upon the pattern of family life; normal growth and development of family members, changing roles of family members—conflict in roles; family structure around the world; family authority patterns; value orientation.

331. Management and Decision-Making in the Family
Fall, Winter, Spring. Summer of even-numbered years. 3(3-0) S S 233. Presentation of the integrated nature of home management; concerns, values, and goals as reflected in decision-making about family resources.

332. Theory and Application of Home Management
Fall, Winter, Spring. 4(1-4) with residence; 4(2-4) without residence. 261; 331 or concurrently; F N 220 or approval of department. Principles of effective home management and their application in a living situation. Residence in a home management house provided.

362. Child Study
Fall, Winter, Spring. Summer of odd-numbered years. 4(3-3) N S 192; S S 233; PSY 151 or ED 200. Home Economics students: 261. Development of child from prenatal through adolescent period. Observations of children of various ages.

364. Guidance of Young Children
Fall, Spring. 3(2-2) 362 or PSY 345 or approval of department. Examination of philosophies of child guidance and their relation to knowledge of child development and behavior. Supervised practice in guiding young children in a nursery school setting.

369. Learning Resources in the Nursery School
Winter, Spring. 4(3-2) Majors: 362; others: ED 312. Selection and use of play materials and equipment for group work with young children and function of these materials in development of child.

400H. Honors Work
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 16 credits. Seniors; approval of department.

437. Management of Work Capacity in the Home
Winter. Summer of even-numbered years. 3(3-0) 331 or approval of department. Analysis of the resource of human work capacity in the home—physiological and psychological factors; principles and use of work simplification.

438. Family Finance
Fall, Winter, Spring. Summer of even-numbered years. 3(3-0) S S 233. Major financial alternatives available to families during the founding, active parenthood, and retirement stages. Implications for the community of the family's financial decisions.

439. Consumer Economic Problems
Fall, Spring. Summer of odd-numbered years. 3(3-0) 438 or approval of department. Current aspects of consumer behavior including motivation, credit buying, and selected economic problems.