520. Insect Ecology
Fall of even-numbered years. 3(2-3)
Approval of department.
Detailed consideration of the dynamics of insect populations. Review of those factors in the insect ecosystem which can be manipulated for the purpose of pest management. Role and use of models in insect ecology.

521. Advanced Stream Ecology
Summer. 3 credits, 421 or approval of instructor. Given at W. K. Kellogg Biological Station. Interdepartmental with the Department of Fisheries and Wildlife.
Stream ecosystem energy budget models with emphasis on individual projects involving both laboratory and field experiments. Particular use will be made of artificial streams and locally abundant species of aquatic insects.

538. 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.

540. 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.

551. Insect Physiology Laboratory
Spring. 2(0-6) 430 or concurrently.
Selected physiological systems in insects.

571. Biology of Nematodes
Spring, 4(2-5) 470 or approval of department. Interdepartmental with and administered by the Department of Zoology. Ontogeny, taxonomy, morphology, pathology and ecology of nematodes, with special reference to plant-parasitic and pathophylogenetic species.

581. Biology of the Arthropoda
Winter, 5(3-6) ZOL 481 or approval of department. Interdepartmental with and administered by the Department of Zoology. Ecology, life cycles, morphology, taxonomy, and distribution of arthropods other than insects.

590. Problems
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.
Advanced individual work in: apiculture, seed insects, insect biochemistry, biostatistics, economic insects, insect ecology, forest insects, morphology, nematology, insect physiology, plant disease transmission, insect toxicology, arachnids, acarina, medical entomology, chemistry of insecticides, insect biology, extension entomology, systems.

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

940. Analytical Techniques for Biological Compounds I
Fall, 4(2-6) Organic chemistry, approval of department.
Application, extraction, cleanup and purification techniques employed in analysis of biologically active compounds. Stress use of radio-isotopes, and column, paper, thin-layer, and molecular sieve chromatography.

941. Analytical Techniques for Biological Compounds II
Winter. 4(2-6) 940.
Analytical techniques used for identification and quantification of biologically active compounds. Emphasis on spectroscopy and gas-liquid chromatography.

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

FAMILY AND CHILD SCIENCES

FCS

College of Human Ecology

145. The Individual, Marriage and the Family
Fall, Winter, Spring. 4(4-0) Students may not receive credit in both 145 and SW 326.

245. Children, Youth and the Family
Fall, Winter, Spring. 3(3-0) Sophomores, SOC 241.
Focuses on family system. Stages of family development studied include childbearing through launching. Interaction of parent, children and societal forces, particularly in middle childhood and adolescent stages emphasized.

262A. Child Growth and Development: Conception Through Early Childhood
Fall, Winter, Spring. Summer of odd-numbered years. 3(3-0) A biological science or psychology course and SOC 241; ED 200 or PSY 160 or 170.
Physical, cognitive, social, and emotional aspects of human growth and development from conception through early childhood.

262B. Child Growth and Development Laboratory
Fall, Winter, Spring. Summer of odd-numbered years. 1(0-1) 262A concurrently or approval of department.
Observation of human development in infants and young children.

364A. Interacting With Young Children—Laboratory
Fall, Winter, Spring. 3(3-0) 262A, 262B; 364A concurrently.
Experience in interaction with children ages two to six years, individually and in small groups in a child development center.

369A. Learning Activities for Early Childhood Programs
Fall, Winter, Spring. 3(3-0) Majors: 262A and B and 364; others: ED 412.
Planning learning activities and teaching strategies for children ages 3 to 6 in early childhood education programs.

369B. Learning Activities for Early Childhood Programs—Laboratory
Fall, Winter, Spring. 3(3-0) 369A concurrently and approval of department.
Experience in planning and carrying out learning activities with young children in an early childhood program.

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

401. Minority Families in America
Winter. 3(3-0) S 213 or approval of department.
Historical, structural, functional components of minority family systems in white America. Centers on a particular minority family system each term. Life styles, pressures, adaptations, viability and continuity of minority family subculture.

444. Internprofessional Relationships in the Family
Fall, Spring. Summer of even-numbered years. 3(3-0) 145 or 245 or approval of department.
Relationships between and among family members as they are affected by other systems and by physical, cultural, social-psychological forces within the family eco-system. Contemporary family life issues.

446. Approaches to the Study of the Family
Fall, Winter. Summer of odd-numbered years. 4(4-0) 145 or 245, 444.
The family is studied from several approaches. Case studies, films, literary materials, research studies and observations of living situations are included.

461. Individual Child Study
Fall, Winter. 3(3-2) Majors: 364; others: 262A, FSY 244 or ED 412.
An in-depth analysis of development and behavior utilizing regular observation of a young child. Applications of theories of child growth and behavior.

464A. Practicum in a Child Development Center
Fall, Winter, Spring. Summer of odd-numbered years. 3 to 7 credits. Majors: 364, 369A, 369B; others: 262A and 262B, or ED 412, approval of department.
A directed practicum in planning, implementing and evaluating the learning environment, in a class of young children during an entire term.
464B. Problems in Teaching in a Child Development Center
Fall, Winter, Spring. Summer of odd-numbered years. 3(2-0) 464A concurrently. Analysis of problems in teaching in an early childhood program. Application of child guidance techniques and principles.

465. Human Sexuality and the Family
365J Fall, Winter, Spring. 3(3-0) Juniors. Credit may not be earned in both FCS 465 and PSY 390. Personal, interpersonal, societal meanings of human sexuality, utilizing ongoing small social group interaction. Non-lecture, value clarification approach, integrating reflection on research findings, family, peer and cultural influences.

467. Administration of Child Development Centers
Spring. 3(3-0) 464A and 464B concurrently. Analysis of the administrator's role in child development centers. Application of philosophical approaches, communication techniques and management skills to operating early childhood education programs. Licensing and other regulations.

468. Teacher-Parent Interaction
Fall, Winter. 3 credits. Majors: 464A and 464B concurrently; others: 262A or ED 412, approval of department. Analysis of parent-teacher communication and interaction, parent involvement, and parent education related to early childhood education programs operated by schools, churches, or community agencies. Field experience when feasible.

469. Physical and Physiological Growth of Children
463J Winter, Spring. 4(4-0) HNF 102; three units of Natural Science. Interdepartmental with Human Nutrition and Foods. Physical and physiological growth patterns. Experimental evidence for nutritional requirements. Applications to feeding practices, and physical activity of children.

470. Current Issues in Family and Child Sciences
Spring. 3(3-0) 464A, or Seniors, or approval of department. Analysis of current events, issues; of legislation which has bearing on homes, families and children and children's programs. Implications for professional decisions and actions.

480. Human Development and Interpersonal Relationships: The Middle and Later Years
Spring. Summer of odd-numbered years. 4(3-1) Introductory sociology and psychology: 145 or 245 or 445. Social-physiological-biological development and socialization for roles in middle and later years. Generational relationships; societal influences. Case material involving interaction with an adult or family in middle or later years.

495. Independent Study
Fall, Winter, Spring. 3(3-0) 4 to 12 credits. May re-enroll for a maximum of 12 credits. Approval of department. Study of a selected topic under the guidance of a faculty advisor in the area of specialty.

498. Field Study
Fall, Winter, Spring. 3(3-0) 4 to 12 credits. May re-enroll for a maximum of 12 credits. Approval of department. Study in off-campus situations in a variety of ways so as to gain involvement in voluntary, governmental or business-sponsored community service agencies to further insights into interaction among the individual, the family and the community.

801A. Seminar in Family Life
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

801B. Seminar in Child Development
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

810. Workshop
Summer. Variable credit. Approval of department. Content varies depending on nature of workshop.

813B. Special Studies in Family and Child Development
Fall, Winter, Spring. Variable credit. Approval of department.

820. Human Development in the Family: Physiological Development
Fall. 6(6-0) Six credits in child development or approval of department. Selected aspects of family members' physiological potential, development, status explored. Family's contributions to members' physiological potential for growth and development and to realization of human potential are seen as fundamental.

821. Human Development in the Family: Personality
Winter. 4(4-0) Six credits in child development or approval of department. Influence of child-rearing practices and parent-child relationships on developing human personality. Application of research findings and theoretical approaches to psychological development in the family and family-related situations.

822. Human Development in the Family: Socialization
Spring. 4(4-0) Basic course in sociology; 6 credits in child development or family life or approval of department. Influence of family structure and interaction upon socialization from infancy to adulthood. Relationship of family to processes in larger social environment, and influence of these on human social development.

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

831. Death, Dying, and the Family
Spring. 3(3-0) Provides students with an understanding of various theoretical frames of reference developed for viewing death within the family and strategies designed to assist them to deal with it.

840. Topics in Child Development
Fall, Winter, Spring. Variable credit. 3(3-0) to 6(6-0) 262A or a child growth and development course. In-depth analysis of a selected topic pertinent to the care and education of young children in child development centers.

841. Early Childhood Education: Curricular Approaches
Spring. 3(3-0) 262A or a child growth and development course. Exploration of theoretical background and content of curricular approaches in early childhood programs. Analysis and evaluation of early childhood curricular materials. Experience in designing and sequencing activities for young children.

842. Assessment of Development of the Young Child
Fall. 3(3-0) A child growth and development course. Survey of assessment instruments and procedures for children from birth to age seven. Techniques for practitioner or parent to use to assess physical, social, emotional and intellectual development.

850. Aging in the Family
Fall. 3(3-0) 490 or approval of instructor. Provides students with a knowledge and understanding of the literature in aging in the family and develops an appreciation of the interrelationships involved in this multidisciplinary area.

862. Theories of Child Development
Fall. 3(3-0) 262A or child psychology. Comparative study of conceptual frameworks utilized in child development.

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