845. Approaches to Language
Fall. 3(3-0) Major in English—Secondary School Teaching or approval of department.
Modern linguistic approaches to language and their application to writing.

846. Approaches to Language
Winter. 3(3-0) Major in English—Secondary School Teaching or approval of department.
Continuation of 845.

847. Reading and the English Teacher
Spring, Summer. 5(5-0)
Investigation of applied linguistics and psycho-linguistics to the reading process with particular emphasis on the application to problems in the teaching of reading and literature.

848. Teaching English in Bicultural Settings
Winter. Spring. 3(3-0)
Viewing a bilingual-bicultural group from their novels, plays, stories, or poems, and from historical, sociological, or linguistic works. Applications to teaching.

849. English Teaching Workshop
Fall, Winter, Spring, Summer. 2 to 5 credits. May re-enroll for a maximum of 10 credits.
Workshop in the development of teaching materials and resources in English. Investigation of sources and bibliographies. Emphasis on seeking practical solutions to particular problems in the teaching of English.

855. Shakespeare
Fall, Spring. 3(3-0)
Intensive study of selected plays.

856. Comparative Literature: Literature and Other Disciplines
Winter. 3(3-0) May re-enroll for a maximum of 9 credits. Interdepartmental with the departments of Romance Languages and German and Russian and administered by the Romance Languages Department.
Relations between literature and the sciences and other arts; social, historical, psychological, philosophical bases of literary study.

862. Approaches to Literature
Winter. 3(4-0) Major in English—Secondary School Teaching or approval of department.
Literature through thematic, genre and historical approaches.

871. Methods of Literary Research
Fall, Spring, Summer. 3(3-0)
Bibliography and use of library; preparation of reports, reviews, and scholarly papers.

878. Comparative Literature: Methods in the Study of Comparative Literature
Fall. 3(3-0) Interdepartmental with the German and Russian and Romance Languages Department.
Rationale and techniques of study in comparative literature.

879. Myth, Ritual and Folklore in Literature
Fall. 3(3-0) May re-enroll for a maximum of 9 credits.
The concepts, scholarship, and methods of study and research in mythology, ritual, and folklore, with special attention to their use in literature and drama.

880. Proseminar for Master’s Degree Candidates
Fall, Winter, Spring, Summer. 3(3-0)
Individual scholarly work under guidance.

885. Studies in the History of Literary Criticism
Fall, Winter, Spring, Summer. 3(3-0)
The history of literary criticism.

886. Studies in Modern Criticism
Fall, Winter, Spring. 3(3-0)
The history of literary criticism.

888. College Teaching of English
Fall, Winter, Spring. 1 to 3 credits. May re-enroll for a maximum of 3 credits. Graduate teaching assistant.
Supervised teaching of college classes in English language and literature.

896. Practicum in English Language and Literature
Fall, Winter, Spring Summer. 2 to 6 credits. Approval of department.
Supervised practical experience in the teaching of English language and literature.

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

902. Comparative Literature: Studies in Form and Genre
Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Interdepartmental with the German and Russian and Romance Languages Department.
Development and interrelationships of individual and collective forms and genres of literature of the Western world, including the drama, tragedy, the novel, the short story, the theory and forms of poetry, popular literature, and the tale.

903. Comparative Literature: Studies in Periodization
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Interdepartmental with the German and Russian and Romance Languages Department.
Analyses of the manner in which various genres, conventions and continuing traditions of literature interact with the creative and critical climates of particular periods and movements, such as classicism, the Middle Ages, the baroque, or romanticism, in qualifying or modifying characteristic literary works.

904. Studies in Influence
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Mutual influences of the English, Romance and Germanic literatures in general and in terms of specific authors and literary kinds, together with studies of the intermediaries of transmission, translations and sources.

905. Studies in English Drama
Fall of odd-numbered years. Winter and Spring of even-numbered years. 3(3-0) May re-enroll for a maximum of 9 credits.
Litteralbeginnings of 1642, excluding Shakespeare.

940. Studies in Shakespeare
Winter of odd-numbered years. 3(3-0) To receive credit, both 840 and 941 must be completed satisfactorily.

941. Studies in Shakespeare
Spring of odd-numbered years. 3(3-0) To receive credit, both 840 and 941 must be completed satisfactorily.

970. Graduate Reading Course
Fall, Winter, Spring, Summer. 1 to 5 credits. Approval of department.
Supervised reading course in English and American literature for Ph.D. candidates.

980. Studies in English Language
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
The English language from the viewpoint of historical problems, literary analysis and pedagogical implications.

981. Seminar: Earlier English Literature
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Special problems in English literature, beginning to 1600.

982. Seminar: Later English Literature
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Special problems in English literature, 1600-1900.

983. Seminar: American Literature
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Special problems in American literature, beginning to 1900.

984. Seminar: Twentieth Century Literature
Winter, Spring. 3(3-0) May re-enroll for a maximum of 6 credits.
Special problems in English and American literature, 1900 to the present.

985. Seminar: Special Studies in Literary Form and Theory
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Forms, genres, and movements.

986. American Literature and Culture
Fall, Winter. 3(3-0)
American literature in a cultural context, drawing upon popular and fine arts, the history of ideas, the history of social movements.

987. Seminar: Special Topics in Comparative Literature
Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Advanced graduates. Interdepartmental with the departments of Romance Languages and German and Russian and administered by the Romance Languages Department.

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

ENTOMOLOGY

College of Natural Science

230. The Role of the Natural Sciences in Future Environments
Fall. 4(4-0) Approval of department. Interdepartmental with the departments of Geology, Physics and Zoology and the College of Natural Science and administered by the College of Natural Science.
Physical and biological science concepts relevant to understanding of environmental issues. Options for action in areas of population size, energy and life support system. Illustrated by case studies.

A-63
Descriptions — Entomology
of Courses

250. Pesticides and Environmental Quality
Winter, 3(3-0)
Impact of agricultural pesticides on man and his environment. Emphasizes the effects of chemi-
cals on food production and combating diseases and ecological imbalance. Presents pesti-
cide alternatives for the future.

301. General Entomology
Fall, Spring, 3(3-0) B S 211 and 212 recommended.
Biological relationships of insects. Insect behavior, ecology, and classification. Metamor-
phosis and development of insects.

302. General Entomology Laboratory
Fall, Spring, 2(0-6) 301 or concurrently.
Experiments in morphology, physiology, behavior of insects. Populations and classification
of major groups.

337. Forest and Shade Tree Entomology
Fall, 4(3-2) Three terms of natural science.
Provides an understanding of the significance and nature of insect injury to forest and shade
trees. Based upon morphology, physiology, biology and taxonomy of insect and host. Analyzes biologi-
cal, chemical, cultural and silvicultural approaches to insect control in order to equip student with competence to carry out survey and action program assignments.

401. Problems
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.
Advanced individual work on a field or laboratory research problem or a study of published literature on a selected topic.

404. Field Entomology
Summer. 6 credits. One year of zoological science or teaching major in general science or approval of department. Given at W. K. Kellogg Biological Station.
Basic field survey in entomology. Emphasis on the biology, collection and identification of in-
sects common to the Gull Lake Biological Station area.

410. Apiculture and Pollination
Spring, 3(3-2)
Biology of the honey bee and some of the wild bees. Relationships between bees and flowering
plants. Value of bees in crop pollination. Introduction to management with visits to the
University apiary.

411. Seminar
Fall, Winter. 1(1-0) Majors or approval of department.
Reports by students, faculty, and representatives of the profession, with emphasis on current problems not covered in regular college subjects.

418. Systematic Entomology
Winter. 4(4-0) 301, 302.
General taxonomic course to acquaint the student with the various groups of insects.

420. Aquatic Insects
Fall, 4(2-4) 301, 302.
Biology, ecology and systematics of aquatic in-
sects.

421. Stream Ecology
Summer. 3 credits. 420 or approval of department. Given at W. K. Kellogg Biological Station.
An in-depth examination of stream ecosystems — physical, chemical and biological aspects. Field work will be centered on local streams. Laboratory exercises will involve manipulations necessary for the determination of population energy budgets, with special emphasis on aquatic insects.

430. Economic Entomology
Winter, 3(3-3) 301, 302.
Recognition, life histories, behavior, ecology and integrated control of insects of economic im-
portance.

435. Taxonomy of Immature Insects
Spring of even-numbered years. 4(1-3)
Identification of immature insects with particular emphasis on the Holometabola.

440. External Morphology of Insects
Fall, 4(2-6) 301, 302, or approval of department.
Morphological concepts of external skeletal parts of insects. Emphasis on evolutionary development of organs and organ systems of various representa-
tive insects.

450. Insect Physiology
Winter of odd-numbered years. 4(4-0)
441, PS1, 401; 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, 309, 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 glypophilic measures.

470. Nematode Diseases of Economic Plants
Winter of odd-numbered years. 4(2-4)
Interdepartmental with the Department of Botany and Plant Pathology.
Major nematode diseases of economically important plants, with emphasis on diagnostic symptoms, nematode biology and principles of control.

480. Insects in Relation to Forest and Shade Trees
Winter of odd-numbered years. 3(3-0)
Major nematode diseases of economically important plants, with emphasis on diagnostic symptoms, nematode biology and principles of control.

481. History of Insect Control
Summer of odd-numbered years. 3(3-3)
Major nematode diseases of economically important plants, with emphasis on diagnostic symptoms, nematode biology and principles of control.

482. Advanced Taxonomy
Fall, Winter, Spring. 4(0-12) May re-
enroll for a maximum of 24 credits. 415, 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. 430 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
Winter of odd-numbered years. 3(2-3)
Approval of department.
Insects and various invertebrates in relation to their environment. Factors affecting populations, speciation and distribution. Application of basic ecological principles to integrated control measures.

821. Advanced Stream Ecology
Spring of even-numbered years. 4(4-0) 450, BC 401.
Energy metabolism, intermediary metabolism and the biochemistry of development in insects; stress biochemical differences between insects and higher animals.

831. Insect Biochemistry Laboratory
Spring of even-numbered years. 2(0-6) 301, 302; organic chemistry.
Laboratory to accompany 830. Experiments designed to elucidate the biochemical mechanisms of importance to insects.

833. 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.

850. Insect Toxicology
Winter of odd-numbered years. 3(3-3)
Chemical and physical properties of insecti-
cides, relationship of chemical structure to mode of action, and physiological basis of toxico-
logical action.

851. Insect Physiology Laboratory
Winter of odd-numbered years. 2(0-6) 450 or concurrently.
Selected physiological systems in insects.

871. Biology of Nematodes
Winter of even-numbered years. 4(2-4) Approval of department. Interdepartmental with the Department of Botany and Plant Pathology.
Ontogeny, taxonomy, morphology, pathology and ecology of nematodes, with special reference to plant-parasitic and phytopathogenic species.
Family and Child Sciences — Descriptions of Courses

461. Individual Child Study
Fall, Winter, Spring. 3(2-2).
Majors: 364; others: 263A, PST 245 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 6 credits. Majors: 364, 369A, 369B; others: 262A and 262B, or ED 412, approval of department.
A directed practicum in observing, 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. 2(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
(365.) Fall, Winter, 3(3-0) Juniors and approval of department.
Personal, interpersonal, societal, and cultural meanings of human sexuality; utilization of small peer 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 or 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, or 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
(463.) Winter, Spring. 4(3-2) HNF 102; three terms 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, or legislation which has bearing on homes, families 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 444.
Social-psychological-biological development and socialization for roles in middle and later years. Generational relationships. Societal influences. Case study approach involving interaction with an adult or family in middle or later years.

FAMILY AND CHILD SCIENCES

FCS

College of Human Ecology

145. The Individual, Marriage and the Family
Fall, Winter, Spring. 4(4-0) Freshman or Sophomore or approval of department. Students may not receive credit in both 145 and S W 228.

245. Children, Youth and the Family
(281.) 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.

Name changed July 1, 1970. Formerly College of Home Economics.