

**855. Shakespeare**  
Fall. 5(4-0) Major in English—  
Secondary School Teaching or approval of de-  
partment.  
Intensive study of selected plays.

**861. Library Methods—Secondary  
Schools**  
Spring. 3(3-0) Major in English—  
Secondary School Teaching or approval of de-  
partment.  
Uses of the library; book selection and ordering.

**862. Approaches to Literature**  
Winter. 5(4-0) Major in English—  
Secondary School Teaching or approval of de-  
partment.  
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.

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

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

**899. Research**  
Fall, Winter, Spring, Summer. Vari-  
able credit. Approval of department.

**902. Studies in Form and Genre**  
Fall, Winter, Spring. 3(3-0) May  
re-enroll for a maximum of 9 credits.  
Development and interrelationships of individual  
and collective forms and genres of literatures  
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. Studies in Periodization**  
(C L 903.) Fall, Winter, Spring. 3(3-0)  
May re-enroll for a maximum of 9 credits.  
Analyses of the manner in which various genres,  
conventions and continuing traditions of litera-  
ture 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 Comparative Drama**  
(C L 905.) Fall, Winter, Spring. 3(3-0)  
May re-enroll for a maximum of 9 credits. Ap-  
proval of department.  
Comparative study of selected playwrights,  
movements, trends and developments in world  
drama from the beginnings to the present day.

**930. 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.  
Liturgical beginnings to 1642, excluding Shake-  
speare.

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

**941. Studies in Shakespeare**  
Spring of odd-numbered years. 3(3-0)  
To receive credit, both 940 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 Amer-  
ican literature for Ph.D. candidates.

**972. Rationale of Literary Research**  
Spring. 3(3-0) Candidacy for the  
Ph.D. degree.  
Principles and methods of research in literary  
problems.

**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, begin-  
nings to 1660.

**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, 1660-  
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, begin-  
nings 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 liter-  
ature, 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.

**999. Research**  
Fall, Winter, Spring, Summer. Vari-  
able credit. Approval of department.

**337. Forest and Shade Tree  
Entomology**  
Fall. 4(3-2) N S 193.

Provides an understanding of significance and  
nature of insect injury to forest and shade trees,  
based upon morphology, physiology, biology and  
taxonomy of insect and host. Analyzes biolog-  
ical, chemical, cultural and silvicultural ap-  
proaches 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 liter-  
ature 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(2-2)

Biology of the honey bee and some of the wild  
bees. Relationships between bees and flowering  
plants. Value of bees in crop pollination. In-  
troduction to management with visits to the  
University apiary.

**411. Seminar**  
Fall, Winter. 1(1-0) Majors or ap-  
proval 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(1-9) 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.

**430. Economic Entomology**  
(300.) Winter. 3(2-3) 301, 302.  
Recognition, life histories, behavior, ecology and  
integrated control of insects of economic im-  
portance.

**438. Taxonomy of Immature Insects**  
Spring of even-numbered years. 4(1-9)  
418.  
Identification of immature insects with particu-  
lar 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 develop-  
ment of structures from the Apterygota through  
the Pterygota.

**441. Internal Morphology**  
Winter. 4(2-6) 440 or approval of  
department.  
Morphology of the internal structure of insects.  
Emphasis on the evolutionary development of  
organs and organ systems of various representa-  
tive insects.

## ENTOMOLOGY ENT

### College of Natural Science

**301. General Entomology**  
Fall, Spring. 3(3-0) B S 211 and  
212 recommended.

Biological relationships of insects. Insect be-  
havior, ecology, and classification. Metamor-  
phosis and development of insects.

**302. General Entomology Laboratory**  
Fall, Spring. 2(0-6) 301 or concu-  
rently.

Experiments in morphology, physiology, be-  
havior of insects. Populations and classifica-  
tion of major groups.

**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.