

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 litera-
ture, 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 litera-
ture 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, 30n.
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.