975. The Reading Process and the Concept of Literacy
Spring. 3(3-0)
R: Open only to doctoral students in English. Approval of department.
Contributions of language and literacy studies to research into the reading process and definitions of literacy.
QA: ENG 975

989. Studies in Rhetoric
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to graduate students in English and American Studies. Approval of department.
Historical and theoretical perspectives on the traditions of rhetoric.
QA: ENG 980

990. Independent Study
Fall, Spring. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
Special project, directed reading, and research arranged by an individual doctoral student and a faculty member in areas supplementing the regular course offerings.

991A. Topics in English Language Studies
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to graduate students in English and American Studies. Approval of department.
A major issue in the study of English such as language planning in the United States, power and status in English discourse, or literary applications of linguistic analysis.
QA: ENG 980

991B. Topics in Comparative Literature
Fall. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Romance Language Courses and Linguistics.
R: Open only to Ph.D. students. Approval of department.
Critical approaches to genre, periodization, and influence in English and other literatures.
QA: ENG 907

991C. Topics in African American Literature
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to graduate students in English. Approval of department.
Analysis of contemporary controversies in African American literary studies.

991D. Topics in the Literature of Africa and the African Diaspora
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Romance Language Courses, and Linguistics and Languages.
R: Approval of department.
Authors, movements, and cultures of the literature of Africa and the African diaspora.

991E. Topics in Anglophone South Asian Literature
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Linguistics and Languages.
R: Open only to graduate students in College of Arts and Letters. Approval of department.
Analysis of an area of South Asian literature written in English.

992. Seminar in American Studies
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in College of Arts and Letters. Approval of department.
American literature in the context of popular and fine arts, the history of ideas, or the history of social movements.
QA: ENG 986

992A. Seminar in English Education
Fall. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
The teaching of English literature, language, and composition.
QA: ENG 973

992B. Seminar in English as a Second Language
Fall. 3(3-0) R: Open only to doctoral students in English. Approval of department.
Contemporary theories and issues relating to learning English as a second language.
QA: ENG 987

992C. Seminar in Earlier English Literature
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
Special problems in English literature, beginning to 1660.
QA: ENG 982

992D. Seminar in Later English Literature
Fall. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
British literature 1660-1900. Culture and society, periodization and genres.
QA: ENG 984

992E. Seminar in 20th Century English Literature
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to doctoral students in English. Literature of Great Britain, Ireland, and other Anglophone countries, exclusive of the United States.
QA: ENG 984

992F. Seminar in American Literature to 1900
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
Issues in American literature of critical and current interest.
QA: ENG 983

992G. Seminar in 20th Century American Literature
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
A particular problem, topic, theme, genre, issue, or period in twentieth-century American literature.
QA: ENG 984

992H. Seminar in Literary Form and Theory
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to doctoral students in English. Approval of department.
Theories of periodization, genre, form, signification, and cultural production which influence the study of literature and language.
QA: ENG 985

998. Doctoral Dissertation Research
Fall, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course.
R: Open only to doctoral students in English.

ENTOMOLOGY

Department of Entomology
College of Natural Science

205. Pests, Society and Environment
Fall, Spring. 3(3-0) Interdepartmental with Botany and Plant Pathology.
Nature of pests and their impact on society. Principles of integrated pest management and environmental quality.
QA: ENT 201, ENT 250

401. Directed Studies
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Approval of department.
Individual field or laboratory research, or review of published literature, on a topic of interest.

404. General Entomology
Fall, 4.0-3. Self-study of even-numbered years. 4 credits. Given at W.K. Kellogg Biological Station.
P: BS 110
Biological relationships of insects to the environment. Evolution, behavior, ecology, metamorphosis, classification, importance to humans, and pest management.
QP: BS 212 QA: ENT 301, ENT 362, ENT 425

410. Agriculture and Pollination
Fall, 2.0-2. Biology of bees and their relationship to flowers, pollination and crop production.
QA: ENT 410

422. Concepts of Biological Information Systems
Spring. 3(3-0)
R: Open only to seniors and graduate students.
Systems approach to managing biological information using computer technology.
QA: SYS 442, SYS 843

460. Medical and Veterinary Entomology
Spring, 3(3-0)
P: BS 110 R: Open only to juniors and seniors.
Insects and other organisms related to human and animal health. Entomopathogens, ecology of vector-borne diseases, epidemiology, and management of arthropod vectors.
QP: ENT 401, ENT 302 QA: ENT 460

470. General Nematology
Spring of even-numbered years. 3(2-3)
P: BS 110 or BS 111.
Biological nematodes with special reference to the influence of phytoparasitic, entomopathogenic, animal parasitic, microbivorous and marine species on human ecology.
QP: BS 210 or BS 211 or BS 212 QA: ENT 470

477. Pest Management I: Pesticides in Management Systems
Fall, 3(3-0) Interdepartmental with Horticulture, Crop and Soil Sciences, and Fisheries and Wildlife.
P: CEM 143, BOT 405 or CSS 402, ENT 404 or ENT 470 or FW 309.
Qk: CEM 404, ENT 360, ENT 425 or CSS 402 or BOT 405 QA: N3C 445

478. Pest Management II: Biological Components of Management Systems
Spring, 3(3-15) Interdepartmental with Horticulture, Crop and Soil Sciences, Fisheries and Wildlife, and Forests.
P: ENT 404 or ENT 470 or BOT 405 or CSS 402 or FW 328.
Principles of host plant resistance and biological control and their relationship to the design of agroecosystems. Classification of insect biological control agents.
QP: ENT 425 or CSS 402 or ENT 470 or BOT 405 QA: N3C 446
810. **Analytical Techniques for Bioactive Compounds: Separation**
Spring of even-numbered years. (4-2-16)
Extraction and chromatographic separations of compounds from environmental matrices.
QA: ENT 840

811. **Analytical Techniques for Bioactive Compounds: Confirmation**
Spring of odd-numbered years. (4-2-18)
Instrumental confirmation of compounds from environmental matrices.
QA: ENE 841

819. **Doctoral Dissertation Research**
Fall, Spring, Summer. 1 to 12 credits.
A student may earn a maximum of 99 credits in all enrollments for this course.
R: Open only to Ph.D. students in Entomology.
QA: ENE 899

**ENVIRONMENTAL ENGINEERING**

Department of Civil and Environmental Engineering College of Engineering

800. **Environmental Engineering Seminar**
Fall, Spring. (1-0) R: Open only to Environmental Engineering majors. Current research in environmental engineering.
QA: ENT 800

801. **Dynamics of Environmental Systems**
Spring. (3-3)
Principles of mass balance, reaction kinetics, mass transfer, reactor theory in environmental engineering.
QA: ENE 801

802. **Physicochemical Processes in Environmental Engineering**
Fall. (3-3)
QA: ENE 802

803. **Physicochemical Process Laboratory**
Spring. (1-0)
P: ENE 801. C: ENE 802
QA: ENE 803

804. **Biological Processes in Environmental Engineering**
Fall. (3-0)
P: ENE 801 or concurrently. Engineering of microbial processes used in wastewater treatment, in-situ bioremediation, and solid waste stabilization.
QA: ENE 804

805. **Biological Processes Laboratory**
Spring. (1-0)
P: ENE 804.
Principles of biological processes applied to wastewater treatment.
QA: ENE 805

807. **Environmental Analytical Chemistry**
Fall. (3-0)
R: Open only to Environmental Engineering majors. Techniques for measurement and analysis in environmental engineering. Sample preparation. Quality assurance.
QA: ENE 807

808. **Environmental Analytical Chemistry Laboratory**
Spring. (0-3)
P: ENE 806. R: Open only to Environmental Engineering majors. Laboratory work in environmental analytical chemistry.
QA: ENE 808

880. **Independent Study in Environmental Engineering**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to Environmental Engineering majors. Solution of environmental engineering problems not related to student's thesis.

890. **Selected Topics in Environmental Engineering**
Fall, Spring, Summer. (3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to Environmental Engineering majors. Selected topics in new or developing areas of environmental engineering.
QA: ENE 890

899. **Master's Thesis Research**
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course.
QA: ENE 899

**FAMILY AND CHILD ECOLOGY**

Department of Family and Child Ecology College of Human Ecology

145. **The Individual, Marriage and the Family**
Fall, Spring. (3-0)
R: Open only to freshmen and sophomores. Development of the young adult in the human ecological context. Issues of sexuality, gender, parenting, work and family interface, communication and resource use.
QA: FCE 145

211. **Child Growth and Development: Conception Through Early Childhood**
Fall, Spring. (3-2)
R: Not open to freshmen. Physical, cognitive, social, emotional and ecological aspects of human growth and development from conception through early childhood.
QA: FCE 211

212. **Children, Youth and Family**
Fall, Spring. (3-0)
P: FCE 145, SOC 100 or FCE 211. R: Not open to freshmen.
An ecological perspective of development during childhood and adolescence emphasizing family and community contexts.
QA: FCE 212

225. **Ecology of Family and Human Development**
Fall. (3-0)
R: Not open to seniors except those in the College of Human Ecology.
Human development across the lifespan with an ecological perspective. Relationships between human resource professionals and family systems.
QA: FCE 225

236. **Personal Finance**
Fall, Spring, Summer. (3-0)
Strategies, techniques and resources useful in the management of personal finance.
QA: FCE 236