

**Descriptions—English
of
Courses**

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

980. 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, Summer, 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 12 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.
P: ENG 850. R: 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 a 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, beginnings to 1660.
QA: ENG 981

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 982

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

992I. Seminar in Literary Form and Theory

Fall, 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. Approval of department.
Theories of periodization, genre, form, signification, and cultural production which influence the study of literature and language.
QA: ENG 985

999. Doctoral Dissertation Research

Fall, Spring, 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

ENT

**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(3-3) Summer 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 302, ENT 425

410. Apiculture and Pollination

Fall, 2(1-2)
Biology of bees and their relationship to flowers, pollination and crop production.
QA: ENT 410

442. 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(2-3)
P: BS 110. R: Open only to juniors and seniors.
Insects and other organisms related to human and animal health. Ectoparasites, ecology of vector-borne diseases, epidemiology, and management of arthropod vectors.
QP: ENT 301, ENT 302 QA: ENT 460

470. General Nematology

Spring of even-numbered years, 3(2-3)
P: BS 110 or BS 111.
Biology of nematodes with special reference to the influence of phytoparasitic, entomopathogenic, animal parasitic, microbiontrophic 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 328.
Chemistry, efficient use, environmental fate, and legal aspects of pesticides.
QP: CEM 143, HRT 402 or ENT 425 or CSS 402 or BOT 405 QA: NSC 445

478. Pest Management II: Biological Components of Management Systems

Spring, 3(2-13) Interdepartmental with Horticulture, Crop and Soil Sciences, Fisheries and Wildlife, and Forestry.
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: NSC 446

805. Integrated Pest Management Systems
Fall. 3(2-12)
Biological, ecological and sociological factors which can be exploited for integrated pest management. Design and management of environmental systems for pest prevention and non-chemical control.

812. Graduate Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 10 credits in all enrollments for this course.
Current research topics. Student presentation required.

815. Insect Behavior
Fall of odd-numbered years. 3(2-13)
P: ENT 404.
Fundamentals of insect behavior with emphasis on mechanisms. Quantitative methods.
QP: ENT 301, ENT 302 QA: ENT 415

818. Systematics, Morphology, Biology: Adults
Spring of odd-numbered years. 3(1-17)
P: ENT 404.
Classification, identification, morphology, biology and evolutionary relationships of adult insects. Specimens provided.
QP: ENT 301, ENT 302 QA: ENT 418

838. Systematics, Morphology, Biology: Immatures
Fall of even-numbered years. 3(1-17)
P: ENT 404.
Classification, identification, morphology, biology and evolutionary relationships of immature insects. Emphasis on terrestrial holometabola. Collection required.
QP: ENT 418 QA: ENT 438

844. Insect Ecology and Evolution
Spring of even-numbered years. 3(3-0)
P: ENT 404.
Unique characteristics and principles of insect ecology and evolution including trophic relationships, community structure, speciation and coevolution.
QP: ENT 301 or ENT 302 or ENT 425 QA: ENT 444

850. Insect Physiology
Spring of even-numbered years. 4(3-12)
P: ENT 404.
System by system description of insect form and function. Examples of how physiological systems are coordinated for complex biological functions.
QP: ENT 301, ENT 302 QA: ENT 450

851. Molecular Entomology
Fall of odd-numbered years. 3(3-0) Interdepartmental with Genetics.
Analysis of molecular processes unique to insects, and their potentials for genetic engineering.
QA: ENT 851

870. Plant Nematology
Spring of odd-numbered years. 3(2-13)
Interdepartmental with Botany and Plant Pathology.
P: BOT 405.
Biology, host parasite relationships and management of selected nematode diseases of economic plants.
QP: BOT 405 QA: ENT 871

890. Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to graduate students.
Individual study on a field or laboratory research topic or review of published literature on a topic of interest.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 24 credits in all enrollments for this course.
R: Open only to masters students in Entomology.
QA: ENT 899

940. 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 940

941. Analytical Techniques for Bioactive Compounds: Confirmation
Spring of odd-numbered years. 4(2-16)
Instrumental confirmation of compounds from environmental matrices.
QA: ENT 941

999. 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: ENT 999

ENVIRONMENTAL ENGINEERING ENE

**Department of Civil and
Environmental Engineering
College of Engineering**

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

801. Dynamics of Environmental Systems
Spring. 3(3-0)
Principles of mass balance, reaction kinetics, mass transfer, reactor theory in environmental engineering.
QP: CE 481 QA: ENE 801

802. Physicochemical Processes in Environmental Engineering
Fall. 3(3-0)
P: ENE 801.
Physical and chemical principles of air and water pollution control and environmental contaminants in water, air and soils.
QP: CE 483 QA: ENE 802

803. Physicochemical Process Laboratory
Spring. 1(0-3)
P: ENE 801. C: ENE 802
Experiments involving physicochemical processes such as air stripping coagulation and flocculation, activated carbon and chemical oxidation.
QP: ENE 801 QA: ENE 802

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

805. Biological Processes Laboratory
Spring. 1(0-4)
P: ENE 804.
Principles of biological processes applied to wastewater treatment.
QP: ENE 804 QA: ENE 805

807. Environmental Analytical Chemistry
Fall. 3(3-0)
R: Open only to Environmental Engineering majors.
Techniques for measurement and analysis in environmental engineering. Sample preparation. Quality assurance.
QP: CE 481

808. Environmental Analytical Chemistry Laboratory
Spring. 1(0-3)
P: ENE 807. R: Open only to Environmental Engineering majors.
Laboratory work in environmental analytical chemistry.
QP: CE 481

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(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: CE 890

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 24 credits in all enrollments for this course.
QA: ENE 899

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 72 credits in all enrollments for this course.
QA: ENE 899

FAMILY AND CHILD ECOLOGY FCE

**Department of Family and
Child Ecology
College of Human Ecology**

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

211. Child Growth and Development: Conception Through Early Childhood
Fall, Spring. 4(3-2)
R: Not open to freshmen.
Physical, cognitive, social, emotional and ecological aspects of human growth and development from conception through early childhood.
QP: PSY 160 or PSY 170 QA: FCE 262A

212. Children, Youth and Family
Fall, Spring. 3(3-0)
P: FCE 145, SOC 100 or FCE 211. R: Not open to freshmen.
An ecosystems perspective on development during childhood and adolescence emphasizing family and community contexts.
QP: FCE 145 or FCE 262A QA: FCE 263

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

238. Personal Finance
Fall, Spring, Summer. 3(3-0)
Strategies, techniques and resources useful in the management of personal finance.
QA: FCE 238