

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.

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.

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.

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 Linguistics and Languages; and Romance Languages. R: Open only to Ph.D. students. Approval of department.
Critical approaches to genre, periodization, and influence in English and other literatures.

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 Linguistics and Languages; and Romance Languages.
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.

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.

992B. Seminar in English as a Second Language

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 the Department of English. Approval of department.
Contemporary theories and issues relating to learning English as a second language.

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.

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.

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.

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.

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.

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.

999. Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to doctoral students in the English major.

ENTOMOLOGY ENT

**Department of Entomology
College of Agriculture and
Natural Resources
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 in relation to environmental quality and sustainable development.

222. New Horizons in Biotechnology

Fall. 2(2-0) Interdepartmental with Crop and Soil Sciences. Administered by Crop and Soil Sciences.
Perspectives on biotechnology for safer food production, environmental quality, and improved human health. Impacts of biotechnology on the national economy. Political and ethical ramifications of applied biotechnology.

319. Introduction to Earth System Science

Fall. 3(3-0) Interdepartmental with Botany and Plant Pathology; Geological Sciences; Zoology; and Sociology. P: Completion of one course in biological or physical science.
Systems approach to Earth as an integration of geochemical, geophysical, biological and social components. Global dynamics at a variety of spatio-temporal scales. Sustainability of the Earth system.

362. Management of Turfgrass Pests

Fall. 4(3-2) Interdepartmental with Crop and Soil Sciences; and Botany and Plant Pathology. Administered by Crop and Soil Sciences. P: (CSS 232)
Chemical, biological, and cultural methods of managing weeds, diseases, and insect pests of turfgrass. Environmental considerations in pest management.

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.

Descriptions—Entomology of Courses

404. Insects: Success in Biodiversity

Fall. 4(3-4) P: BS 110 or BOT 105, BOT 106.

Biological adaptations of insects to the environment. Evolution, behavior, ecology, metamorphosis, classification, importance to humans, and pest management.

407. Diseases and Insects of Forest and Shade Trees

Spring. 4(3-3) Interdepartmental with Botany and Plant Pathology. Administered by Botany and Plant Pathology. P: BOT 105 or BS 110 or LBS 144; BOT 218 or FOR 204 or HRT 211. R: Completion of Tier I writing requirement. Not open to students with credit in BOT 405.

Diseases, insects, and environmental problems affecting trees in forests, parks, suburbs, and nurseries. Methods of control.

410. Apiculture and Pollination

Fall. 2(1-2)

Biology of bees and their relationship to flowers, pollination and crop production.

419. Advanced Earth System Science

Spring. 3(2-2) Interdepartmental with Botany and Plant Pathology; Geological Sciences; Zoology; and Sociology. P: ENT 319

Systems science theory applied to analysis of the biological, geological, physical, and social causes and consequences of global changes. Issues of sustaining the Earth system.

422. Aquatic Entomology

Fall of odd years. 3(3-3) Interdepartmental with Fisheries and Wildlife; Zoology. P: (BS 110)

Biology, ecology and systematics of aquatic insects in streams, rivers and lakes. Field trips and aquatic insect collection required. SA: ENT 420

442. Concepts of Biological Information Systems

Spring. 3(3-0) Interdepartmental with Resource Development. R: Open only to seniors and graduate students.

Systems approach to managing biological information using computer technology.

460. Medical and Veterinary Entomology

Spring of even years. 3(2-3) P: BS 110. R: not open to freshmen and sophomores

Insects and other organisms related to human and animal health. Ectoparasites, ecology of vector-borne diseases, epidemiology, and management of arthropod vectors.

469. Biomonitoring of Streams and Rivers

Summer. 3(2-3) Given only at W.K. Kellogg Biological Station. Interdepartmental with Fisheries and Wildlife. P: (BS 110)

Practical field and lab rapid bioassessment methodologies used to sample and assess the biota of streams and rivers. Sampling and identification of fish, macroinvertebrates and other biota will be emphasized.

470. General Nematology (W)

Spring of odd years. 3(2-3) P: BS 110 or BS 111, BS 111L. R: Completion of Tier I writing requirement.

Biology of nematodes with special reference to the influence of phytoparasitic, entomopathogenic, animal parasitic, microbiontrophic and marine species on human ecology.

477. Pest Management I: Pesticides in Management Systems

Fall. 3(3-0) Interdepartmental with Crop and Soil Sciences; and Fisheries and Wildlife; and Horticulture. P: CEM 143; BOT 405 or CSS 402, ENT 404 or ENT 470 or FW 328.

Chemistry, efficient use, and environmental fate of pesticides. Legal and social aspects of pesticide use.

478. Pest Management II: Biological Components of Management Systems (W)

Spring of even years. 3(2-3) Interdepartmental with Crop and Soil Sciences; Forestry; Fisheries and Wildlife; and Horticulture. P: ENT 404 or ENT 470 or BOT 405 or CSS 402 or FW 328. R: Completion of Tier I writing requirement.

Principles of host plant resistance and biological control and their relationship to the design of agroecosystems. Classification of insect biological control agents.

485. Tropical Biology

Spring. 3(3-0) Interdepartmental with Zoology; and Botany and Plant Pathology. Administered by Zoology. P: (ZOL 355) R: Open only to juniors or seniors.

Tropical biota emphasizing evolutionary and ecological principles compared across tropical ecosystems.

805. Integrated Pest Management Systems

Fall. 3(2-2)

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 years. 3(2-3) P: ENT 404.

Fundamentals of insect behavior with emphasis on mechanisms. Quantitative methods.

818. Systematics, Morphology, Biology: Adults

Spring of even years. 3(1-7) P: ENT 404.

Classification, identification, morphology, biology and evolutionary relationships of adult insects. Specimens provided.

838. Systematics, Morphology, Biology: Immatures

Fall of even years. 3(1-7) P: ENT 404.

Classification, identification, morphology, biology and evolutionary relationships of immature insects. Emphasis on terrestrial holometabola. Collection required.

844. Insect Ecology and Evolution

Spring of odd years. 3(3-0) P: ENT 404.

Unique characteristics and principles of insect ecology and evolution including trophic relationships, community structure, speciation and coevolution.

848. Biological Control of Insects and Weeds

Spring of odd years. 3(2-2) RB: Ecology and introductory entomology

Principles and practices in the application of natural enemies to control arthropod and weed pests. Identification and biology of beneficial species (parasitoids, predators, pathogens) and the ecological basis for their use in pest management systems.

850. Insect Physiology

Spring of odd years. 3(2-2) P: ENT 404.

System by system description of insect form and function. Examples of how physiological systems are coordinated for complex biological functions.

851. Molecular Entomology

Fall of odd years. 3(3-0) Interdepartmental with Genetics.

Analysis of molecular processes unique to insects, and their potentials for genetic engineering.

870. Plant Nematology

Spring of even years. 3(2-3) Interdepartmental with Botany and Plant Pathology. P: BOT 405.

Biology, host parasite relationships and management of selected nematode diseases of economic plants.

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.

940. Analytical Techniques for Bioactive Compounds: Separation

Spring of odd years. 4(2-6)

Extraction and chromatographic separations of compounds from environmental matrices.

941. Analytical Techniques for Bioactive Compounds: Confirmation

Spring of even years. 4(2-6)

Instrumental confirmation of compounds from environmental matrices.

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.