

Entomology—ENT

- 838 Systematics, Morphology, Biology: Immatures**
Fall of even years. 3(1-7) P:NM: (ENT 404)
Classification, identification, morphology, biology and evolutionary relationships of immature insects. Emphasis on terrestrial holometabola. Collection required.
- 844 Insect Ecology, Evolution and Conservation**
Fall of even years. 3(3-0) P:NM: (ENT 404)
Unique characteristics and principles of insect ecology and evolution including trophic relationships, community structure, speciation, coevolution and conservation.
- 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:NM: (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 Nematode Management in Crop Systems**
Summer of even years. 3(2-3) Interdepartmental with Botany and Plant Pathology. P:NM: (BOT 405) SA: BOT 870
Biology, host parasite relationships and management by farming and cropping systems 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.
Master's thesis research.
- 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.
Doctoral dissertation research.

ENVIRONMENTAL ENGINEERING ENE

Department of Civil and Environmental Engineering College of Engineering

- 427 Environmental Toxicology and Society**
Spring of odd years. 3(3-0) Interdepartmental with Animal Science; Sociology. Administered by Department of Animal Science. P:NM: (ISB 200 or ISB 202 or ISB 204 or ISB 206H or BMB 200 or BS 111 or BS 110)
Impact of environmental chemicals on health and modern society. Cellular and organ functions and their interface with the environment. Limitations of scientific investigation and environmental regulations.
- 800 Environmental Engineering Seminar**
Fall, Spring. 1(1-0) R: Open only to Environmental Engineering majors.
Current research in environmental engineering.
- 801 Dynamics of Environmental Systems**
Spring. 3(3-0)
Principles of mass balance, reaction kinetics, mass transfer, reactor theory in environmental engineering.
- 802 Physicochemical Processes in Environmental Engineering**
Fall. 3(3-0) P:NM: (ENE 801)
Physical and chemical principles of air and water pollution control and environmental contaminants in water, air and soils.
- 804 Biological Processes in Environmental Engineering**
Fall. 3(3-0) P:NM: (ENE 801 or concurrently)
Engineering of microbial processes used in wastewater treatment, in-situ bioreclamation, and solid waste stabilization.
- 806 Laboratory Feasibility Studies for Environmental Remediation**
Spring. 3(2-4) P:NM: (ENE 802 and ENE 804) R: Open only to graduate students in Environmental Engineering, Environmental Engineering-Environmental Toxicology, and Environmental Engineering-Urban Studies. Not open to students with credit in ENE 803 or ENE 805.
Analysis and characterization of contaminants in soil or water. Conceptual and preliminary design of treatment systems. Use of treatability studies to evaluate treatment options. Oral presentations and preparation of consulting reports with design recommendations.
- 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.
- 808 Environmental Analytical Chemistry Laboratory**
Spring. 1(0-3) P:NM: (ENE 807) R: Open only to Environmental Engineering majors.
Laboratory work in environmental analytical chemistry.
- 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.
- 892 Master's Research Project**
Fall, Spring, Summer. 3 to 5 credits. R: Open only to master's students in the Environmental Engineering major. Approval of department.
Master's degree Plan B individual student research project. Original research, research replication, or survey and reporting on a research topic.
- 893 Master's Design Project**
Fall, Spring, Summer. 1 to 3 credits. R: Open only to master's students in the Environmental Engineering major. Approval of department.
Master's degree Plan B individual student environmental engineering design project.
- 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.
Master's thesis research.
- 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.
Doctoral dissertation research.

EPIDEMIOLOGY EPI

Department of Epidemiology College of Human Medicine

- 390 Disease in Society: An Introduction to Epidemiology and Public Health**
Spring. 3(3-0) Interdepartmental with Social Science.
Human epidemiology and population health issues facing contemporary society, in both developed and less developed settings. Health-related information in the mass media and scholarly publications.