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; and Sociology. Administered by Animal Science. P: (ISB 200 or ISB 202 or ISB 204 or ISB 206H or BCH 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: 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: 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: ENE 802, ENE 804 R: Open only to graduate students in Environmental Engineering, Environmental Engineering-Environmental Toxicology, and Environmental Engineeri ng-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: 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. 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 research project. Original research, research replication, or survey and reporting on a research topic.

893. Master's Design 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 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.

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.

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.

810. Introduction to Descriptive and Analytical Epidemiology
Fall. 3(3-0) R: Open only to master's students in the Epidemiology major or approval of department.
Study of disease from a population perspective as the interaction of host, agent, and environment. Fundamental concepts include case definition, measuring frequency of disease, mortality and morbidity data, and major study designs.
SA: HM 810

812. Causal Inference in Epidemiology
Fall. 3(3-0) P: EPI 810, LCS 829. R: Open only to master's students in the Epidemiology major or approval of department.
Causal models, criteria, and causality related to study design and analysis in epidemiology. Application of theoretical concepts to the design, analysis, and assessment of epidemiologic research.
SA: HM 812

813. Investigation of Disease Outbreaks
Fall, Spring, Summer. 3 credits. P: EPI 810 or concurrently. R: Open only to master's students in the Epidemiology major or approval of department.
Principles of and practice in investigating disease outbreaks. Field trips required.
SA: HM 813

814. Nutritional Epidemiology
Fall of odd years. 3(3-0) P: EPI 810 or concurrently. R: Open only to master's students in the Epidemiology major or approval of department.
Methodologies used in epidemiologic studies of diet and health in the context of U.S. and international dietary patterns. Relationship between diet and specific diseases.
SA: HM 814

815. Epidemiology of Cardiovascular Disease
Summer of even years. 3(3-0) P: EPI 810. R: Open only to master's students in the Epidemiology major or approval of department.
Survey of methodologies used in epidemiologic studies of cardiovascular diseases. Review of evidence of genetic, environmental, and behavioral causes of cardiovascular disease.
SA: HM 815

816. Reproductive and Perinatal Epidemiology
Summer of odd years. 3(3-0) P: EPI 810 or concurrently. R: Open only to master's students in the Epidemiology major or approval of department.
Epidemiology of adverse health states in pregnancy and the puerperium. Impact of these health states on subsequent child development.
SA: HM 816

817. Epidemiology of Communicable Diseases
Fall of even years. 3(3-0) P: EPI 810. R: Open only to master's students in the Epidemiology major or approval of department.
Application of principles of epidemiology to research in communicable diseases relevant to public health in the U.S. and other countries.
SA: HM 817