Environmental Analytical Chemistry Laboratory
Fall, Spring, Summer. 1(0-3) P:NM: (ENE 807) R: Open only to Environmental Engineering majors. Laboratory work in environmental analytical chemistry.

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.

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 Env i- ronmental Engineering majors. Selected topics in new or developing areas of environ -mental engineering.

Master's Research Project
Fall, Spring, Summer. 3 to 5 credits. R: Open only to master's students in the Envi ronmental 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.

Master's Design Project
Fall, Spring, Summer. 3 to 5 credits. R: Open only to master's students in the En vi ronmental Engineering major. Approval of department. Master's degree Plan B individual student environmental engineering design project.

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.

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.
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. SA: HM 810
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.

812  Causal Inference in Epidemiology
Fall (3-0) P:N:M: (EPI 810 and LCS 829) R: Open only to master's students in the Epidemiology major or approval of department. SA: HM 812
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.

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

814  Nutritional Epidemiology
Fall of odd years. 3(3-0) P:N:M: (EPI 810 or concurrently) R: Open only to master's students in the Epidemiology major or approval of department. SA: HM 814
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.

815  Epidemiology of Cardiovascular Disease
Spring of even years. 3(3-0) P:N:M: (EPI 810 and concurrently) R: Open only to master's students in the Epidemiology major or approval of department. SA: HM 815

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

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

818  The Epidemiology of Zoonotic Diseases
Spring of odd years. 3(3-0) Interdepartmental with Veterinary Medicine. P:N:M: (EPI 810) R: Open only to master's students in the Epidemiology major or approval of department. SA: HM 818
Human susceptibility to diseases of animals. Modes of transmission, surveillance, and strategies for prevention of specific zoonotic diseases.

819  Spatial Epidemiology and Medical Geography
Summer of even years. 3(3-0) Interdepartmental with Geography. P:N:M: (EPI 810) R: Open only to master's students in the Epidemiology major or approval of department. SA: HM 819
Concepts, techniques, and utilization of spatio-epidemiologic analyses for human health.

820  Evidence-Based Medicine
Fall. 3(3-0) Interdepartmental with Medicine. P:N:M: (EPI 810 or concurrently and STT 421 or concurrently) R: Open only to master's students in the Epidemiology major or approval of department. SA: FMP 821, HM 821
Methodology of clinical epidemiology and health services outcomes research. Linkage of epidemiology with daily clinical problems.

821  Epidemiology of the Health and Cognitive Status of the Elderly
Fall of odd years. 3(3-0) Interdepartmental with Family Practice. P:N:M: (EPI 810 or concurrently) R: Open only to master's students in the Epidemiology major or approval of department. SA: FMP 821, HM 821
Interpretation of research on the health and cognitive status of elderly. Interpretation of statistical tests of hypotheses. Conclusions based on data.

822  Environmental Epidemiology
Fall of odd years. 3(3-0) P:N:M: (EPI 810 and concurrently and STT 421 or concurrently) R: Basic science in biology, physiology, immunology R: Open only to graduate students in the Department of Epidemiology or approval of department. SA: HM 822
Epidemiology of health effects and risk communication.

823  Cancer Epidemiology
Fall of even years. 3(3-0) P:N:M: (EPI 810 and concurrently and STT 421 or concurrently) R: Basic science in biology, physiology, immunology R: Open only to graduate students in the Department of Epidemiology or approval of department. SA: HM 823

824  Reproductive Epidemiology
Fall of even years. 3(3-0) P:N:M: (EPI 810 or concurrently and STT 421 or concurrently) R: Social science or biological science R: Open only to graduate students in the Department of Epidemiology or approval of department. SA: HM 824
Epidemiology of reproductive events.

825  Epidemiologic Modeling
Spring of odd years. 3(3-0) Interdepartmental with Physics. P:N:M: (EPI 810 and STT 422) R: Approval of department. SA: HM 825
Mathematical modeling of epidemics. Stochastic and chaotic systems approaches. Applications through personal computer software.

826  Research Methods in Epidemiology
Fall. 3(3-0) P:N:M: (STT 422) R: Open only to master's students in the Epidemiology major. SA: HM 826
Analyses of epidemiologic and clinical data applying statistical methods, based on logistic and survival models, using standard software.

827  The Nature and Practice of Scientific Integrity
Spring. 3(3-0) P:M: (EPI 810) R: Open only to graduate students in the Department of Epidemiology. Approval of department. SA: HM 827
Historical development of where and how science is practiced in the United States. Scientific culture, sociology, and ethical standards. Principles, standards, and practices which define scientific integrity and responsible research conduct.

829  Design and Conduct of Epidemiological Studies and Clinical Trials
Spring. 3(2-2) Interdepartmental with Large Animal Clinical Sciences. Administered by Department of Large Animal Clinical Sciences. P:N:M: (VM 533) or approval of department. SA: HM 829
Open only to graduate students in the colleges of Human Medicine, Osteopathic Medicine, or Veterinary Medicine.


890  Independent Study in Epidemiology
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P:N:M: (EPI 810) R: Open only to master's students in the Epidemiology major. Approval of department. SA: HM 890
Independent study in areas relevant to epidemiology such as population genetics.

899  Master's Thesis Research
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open only to master's students in the Epidemiology major. Approval of department. SA: HM 899
Master's thesis research.