EPIDEMIOLOGY   EPI

Department of Epidemiology
College of Human Medicine

390   Disease in Society: Introduction to Epidemiology and Public Health
Spring. 4(4-0) Interdepartmental with Social Science. Administered by Epidemiology.
Human epidemiology and population health issues facing contemporary society. Developed and less-developed settings. Health-related information in the mass media and scholarly publications.

546   Information Management: Fundamentals of Epidemiology and Biostatistics
Spring. 1(1-0) RB: Undergraduate mathematics and/or statistics R: Open only to graduate-professional students in the College of Human Medicine.
Introduction to accessing, analyzing, and applying information to patients and to populations. Offered first ten weeks of the semester.

547   Information Management: Applications of Epidemiology and Biostats
Fall. 1(1-0) P:M: EPI 546 RB: Undergraduate mathematics and/or statistics. Open only to 2nd year College of Human Medicine students.
Basic competency in accessing, analyzing, and applying information to patients and populations.

805   Readings in the Historical Roots of Epidemiological Thought
Fall. 3(3-0) Interdepartmental with History. Administered by Epidemiology.
Historical evolution of models of disease causation and population perspectives on disease.

810   Introductory Epidemiology
Fall. 2(2-0) R: Open to graduate students in the Department of Epidemiology or approval of department. SA: HM 810
Disease from a population perspective as the interaction of host, agent, and environment. Case definition, measuring frequency of disease, mortality and morbidity data, and major study designs.

811   Epidemiology Exercises and Applications
Fall. 1(1-0) R: Open to graduate students in the Department of Epidemiology or approval of department. C: EPI 810 concurrently and STT 425 concurrently.
Theoretical, conceptual, and methodological issues in epidemiological practice.

812   Causal Inference in Epidemiology
Fall. 3(3-0) RB: EPI 810 and LCS 829 R: Open to graduate students in the Epidemiology major or approval of department. SA: HM 812
Causality 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. RB: EPI 810 or concurrently R: Open to graduate students in the Epidemiology major or approval of department. SA: HM 813
Principles of and practice in investigating disease outbreaks.

814   Nutritional Epidemiology
Fall of odd years. 3(3-0) RB: EPI 810 or concurrently R: Open to graduate 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
Fall of even years. 3(3-0) RB: EPI 810 R: Open to graduate students in the Epidemiology major or approval of department. SA: HM 815
Survey of methodologies used in epidemiologic studies of cardiovascular diseases. Review of evidence of genetic, environmental, and behavioral causes of cardiovascular disease.

816   Perinatal Epidemiology
Summer of odd years. 3(3-0) RB: EPI 810 R: Open only to graduate 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) RB: EPI 810 R: Open to graduate 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. Administered by Epidemiology. RB: EPI 810 R: Open to graduate 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. Administered by Epidemiology. RB: EPI 810 R: Open to graduate 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
Spring of even years. 3(3-0) Interdepartmental with Medicine. Administered by Epidemiology. P:M: (EPI 810 or concurrently) and (STT 421 or concurrently)
Methodology of clinical epidemiology and health services outcomes research. Linkage of epidemiology with daily clinical problems.

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

823   Cancer Epidemiology
Spring of odd years. 3(3-0) P:M: EPI 810 and STT 421 R: Open to graduate students in the Epidemiology major or approval of department. SA: HM 823
Basic principles of carcinogenesis. Major etiologic factors, types of malignancies, and biomarkers for susceptibility and exposure. Prevention and early detection of cancer.

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

826   Research Methods in Epidemiology
Fall. 3(3-0) P:M: STT 422 R: Open to graduate students in the Epidemiology major or approval of department. 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
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 Large Animal Clinical Sciences. RB: (VM 533) or approval of department. R: Open only to graduate students in the colleges of Human Medicine, Osteopathic Medicine, or Veterinary Medicine.
Applied analytical methods in experimental design. Assessment of health and disease status of animal and human populations. Risk assessment and interpretation of clinical trials.

830   Epidemiology of Foodborne Diseases and Food Safety: An Overview
Fall. 3(3-0) Interdepartmental with Large Animal Clinical Sciences. Administered by Large Animal Clinical Sciences. RB: Advanced undergraduate courses in biology, microbiology, biological sciences, biochemical sciences, food technology. R: Approval of department.
Epidemiologic survey of important foodborne diseases addressing recent trends. Sources of surveillance data. Measurement and management of risk factors associated with major foodborne diseases. Tracking foodborne pathogens from farm to table. Introduction to Hazard Analysis Critical Control Points (HACCP).

835   Topics and Methods in Neuroepidemiology
Summer of even years. 3(3-0) Interdepartmental with Neurology and Ophthalmology. Administered by Epidemiology. P:M: EPI 810
Epidemiology of neurologic conditions and discussion of the inherent difficulty in studying these disorders.

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Epidemiology—EPI

847 Analysis of Survival Data
Spring of even years. 3(3-0) Interdepartmental with Statistics and Probability. Administered by Statistics and Probability. RB: STT 422 or STT 442 or STT 862

Analysis of lifetime data. Estimation of survival functions for parametric and nonparametric models. Censored data. The Cox proportional hazards model. Accelerated failure time models. Frailty models. Use of statistical software packages.

851 SAS Programming I: Essentials
Fall. 1(1-0) R: Open only to graduate students in the Epidemiology major or approval of department.

A programming approach to plan and write simple SAS programs to solve common data management and data analysis problems.

852 SAS Programming II: Data Management and Analysis
Spring. 1(1-0) P:M: EPI 851 R: Open only to graduate students in the Epidemiology major or approval of department.

A programming approach to plan and write SAS programs to solve common data management and data analysis problems.

853 SAS Programming III: Research Data Analysis Using SAS
Summer. 1(1-0) P:M: EPI 852 R: Open only to graduate students in the Epidemiology major or approval of department.

A programming approach to plan and write SAS programs to solve data management and data analysis problems in research settings.

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. RB: 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.

910 Themes in Contemporary Epidemiology
Fall of odd years. 3(3-0) RB: Master of Science in Epidemiology

Discussion and critique of important contemporary themes in epidemiology as reflected in current publications in the field.

920 Advanced Methods in Epidemiology and Applied Statistics
Spring of even years. 3(3-0) Interdepartmental with Statistics and Probability. Administered by Epidemiology. P:M: EPI 826

Pattern recognition and cluster analysis, longitudinal data analysis, path analysis, repeated measures and time-series analysis.

935 Research Seminar
Spring of even years. 3(3-0) P:M: EPI 810 and LCS 829 and EPI 812 RB: Master of Science in Epidemiology or equivalent.

Conceptualization, development, and writing of research proposals in epidemiology and other forms of clinical field research.

945 Molecular Epidemiology
Fall of even years. 3(3-0) P:M: EPI 910 or concurrently

Strategies for incorporation of genetic and non-genetic biomarkers in epidemiology.

950 Advanced Biostatistical Methods in Epidemiology
Fall of even years. 3(3-0) P:M: STT 425 and STT 426 or approval of department; application required RB: Calculus, linear algebra, regression, experimental designs. R: Open to graduate students.

In-depth study of specific biostatistical methods and epidemiology applications.

990 Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to doctoral students in the Department of Epidemiology. Approval of department.

Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.

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 Epidemiology major.

Doctoral dissertation research.