EPI—Epidemiology

Department of Epidemiology
College of Human Medicine

200 History of Public Health and Epidemiology
Spring. 2(2-0) R: Open to undergraduate students. Approval of department. Introduction to the historical development and evolution of public health and epidemiology. Development of theories of models of disease and disease causation via selected case studies.

290 Critical Thinking and Scientific Reasoning in Public Health and Epidemiology
Fall. 2(2-0) R: Open to undergraduate students. Approval of department. Exploration of critical thinking skills and inductive vs. deductive reasoning strategies and their weaknesses.

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.

490 Public Health and Epidemiology
Fall. 4(4-0) P: STT 200 and EPI 200 and EPI 290 and PHL 344 and EPI 390 R: Open to undergraduate students. Approval of department. Concepts and methods of public health and epidemiology.

491 Biostatistics Lab
Fall. 1(0-2) P: EPI 200 and EPI 290 and EPI 390 and STT 200 and PHL 344 R: Open to undergraduate students. Approval of department. Introduction to biostatistics and data analysis software package using epidemiological examples in public health.

499 Senior Seminar/Capstone Experience
Spring. 2(2-0) P: STT 200 and PHL 344 and EPI 200 and EPI 290 and EPI 390 and EPI 490 and EPI 491 R: Open to undergraduate students. Approval of department. Selected problems in the study of global public health and epidemiology. Development and defense of thesis paper.

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: EPI 546 RB: Undergraduate mathematics and/or statistics. R: Open to students in the College of Human Medicine or approval of department. 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.

808 Biostatistics I
Fall. 3(3-0) Interdepartmental with Statistics and Probability. Administered by Epidemiology. RB: College-level algebra. R: Open to masters students or doctoral students in the Epidemiology major or approval of department. Applications of probability and statistics in the applied health sciences. Probability distributions, estimation and tests for one-, two-, and paired samples, linear regression, correlation, and ANOVA. Use of statistical software. Critical appraisal of statistical methods in the biomedical literature.

809 Biostatistics II
Spring. 3(3-0) Interdepartmental with Statistics and Probability. Administered by Epidemiology. P: STT 425 or EPI 808 RB: MTH 103 or MTH 110 or MTH 116 R: Open to masters students or doctoral students in the Epidemiology major or approval of department. Analysis of categorical data in epidemiologic studies. Contingency tables and logistic regression.

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 490 concurrently. Theoretical, conceptual, and methodological issues in epidemiological practice.

812 Causal Inference in Epidemiology
Fall. 3(3-0) P: EPI 810 and EPI 811 RB: 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
Spring. 3 credits. P: EPI 810 and EPI 811 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
Spring of even years. 3(3-0) RB: EPI 810 and EPI 811 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 and EPI 811 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 peripartum. 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
Spring. 3(3-0) Interdepartmental with Geography. Administered by Epidemiology. P: EPI 810 or GEO 435 R: Open to graduate students in the Department of Epidemiology or in the Department of Geography 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: EPI 810 and EPI 811 and STT 425 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: 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: EPI 810 and EPI 811 and STT 425 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: (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: STT 426 R: Open to graduate students in the Epidemiology major or approval of department. SA: HM 826

827  The Nature and Practice of Scientific Integrity
Spring. 3(3-0) P: EPI 810 and EPI 811

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. P: (VM 533 or EPI 810) and STT 425

830  Epidemiologic Overview of Foodborne Diseases and Food Safety
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, biochemistry sciences, food technology. R: Open to graduate students in the College of Veterinary Medicine or in the Food Safety Specialization or in the Food Safety major.

835  Neuroepidemiology
Summer of even years. 3(3-0) Interdepartmental with Neurology and Ophthalmology. Administered by Epidemiology. P: EPI 810 and EPI 811 R: Open to graduate students in the Epidemiology major or approval of department. Epidemiology of neurologic conditions and discussion of the inherent difficulty in studying these disorders.

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

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: 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: 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

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

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: EPI 826
Pattern recognition and cluster analysis, longitudinal data analysis, path analysis, repeated measures and time-series analysis.

935  Research Seminar
Spring. 3(3-0) P: EPI 810 and EPI 811 and EPI 812 and LCS 829 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: EPI 910 or concurrently
Strategies for incorporation of genetic and non-genetic biomarkers in epidemiology.