

# Epidemiology (EPID)

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## Courses

### **EPID 400. Principles of Epidemiology. 3 hours.**

Introduction to descriptive and analytic epidemiology, determinants of health and disease in populations, and application of epidemiologic methods to disease control; includes use of basic epidemiologic software. Course Information: Prerequisite(s): Credit or concurrent registration in BSTT 400 or consent of the instructor. Enrollment restricted to public health students; other graduate, professional, and advanced undergraduate students admitted by consent as space permits. To obtain consent, see the SPH registrar.

### **EPID 402. Health Policy for Epidemiologists and Biostatisticians. 1 hour.**

Epidemiological data and biostatistics provide the evidence to support the development and justification of policies. Public health policy interventions, factors influencing political and social environments and the evaluation of policy-making will be addressed. Course Information: Same as BSTT 402.

### **EPID 403. Introduction to Epidemiology: Principles and Methods. 3 hours.**

Introduction to descriptive and analytic epidemiology, and determinants of health and disease in populations. Measures of occurrence, association and statistical testing will be addressed, along with study designs, bias and confounding. Course Information: Prerequisite(s): Credit or concurrent registration in BSTT 400 and graduate or professional standing; or consent of the instructor.

### **EPID 404. Intermediate Epidemiologic Methods. 4 hours.**

Introduction to multivariable methods in Epidemiology, including stratified analysis and regression modeling. Students will use statistical software to analyze data from epidemiologic studies. Course Information: Prerequisite(s): EPID 403 and EPID 406; and credit or concurrent registration in BSTT 401; and graduate or professional standing; or consent of the instructor.

### **EPID 406. Epidemiologic Computing. 3 hours.**

Hands on course for students using SAS for epidemiologic analysis. Addresses practical issues in statistical programming for epidemiology students. Course Information: Extensive computer use required. Prerequisite(s): Credit or concurrent registration in BSTT 400 and Credit or concurrent registration in EPID 403; or Credit or concurrent registration in BSTT 400 and Credit or concurrent registration in EPID 400; or consent of the instructor.

### **EPID 408. Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats. 3 hours.**

Preparation, understanding of threats, and rescue & response issues pertaining to potential terrorist incidents from a public health perspective. Course Information: Same as EOHS 408. Prerequisite(s): Graduate or professional standing; or consent of the instructor. Recommended background: EOHS 400 and EPID 410.

### **EPID 409. The Epidemiology of HIV/AIDS. 2 hours.**

Review of the HIV/AIDS pandemic and the global response to it focusing on patterns of transmission, risk factors and prevention/ intervention. Course Information: Prerequisite(s): EPID 400 or consent of the instructor.

### **EPID 410. Epidemiology of Infectious Diseases. 2 hours.**

Epidemiology of selected infectious diseases, including incidence, prevalence and control of disease. Epidemic investigation is emphasized. Course Information: Prerequisite(s): Credit or concurrent registration in EPID 400; or credit or concurrent registration in EPID 403.

### **EPID 411. Epidemiology of Chronic Diseases. 3 hours.**

Selected topics in chronic diseases with critical analysis of current epidemiologic literature. Course Information: Prerequisite(s): EPID 400 or consent of the instructor.

### **EPID 412. Introduction to Psychosocial Epidemiology. 2 hours.**

Reviews landmark studies of psychosocial and psychiatric disorders in U.S. communities; evaluates research methodology, case definition, identification, and empirical findings. Course Information: Prerequisite(s): EPID 400 or consent of instructor.

### **EPID 428. Epidemiology of Violence. 2 hours.**

Reviews public health aspects of violence-related mortality and morbidity, examines existing data bases and conceptual frameworks focusing on etiology, epidemiology, surveillance and prevention. Course Information: Prerequisite(s): EPID 400 or consent of the instructor.

### **EPID 471. Population. 3 or 4 hours.**

The measurement and study of major trends and differentials in fertility, mortality, migration, growth, and compositional characteristics of the population of the United States and other nations. Course Information: Same as SOC 471. 3 undergraduate hours. 4 graduate hours. Prerequisite(s): 6 hours of upper-division sociology, including SOC 201, or consent of the instructor.

### **EPID 494. Introductory Special Topics in Epidemiology. 1-4 hours.**

Special topics in substantive areas of Epidemiology (including infectious disease, chronic disease, environmental/occupational, social). Course content will vary with each offering. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): EPID 400 or EPID 403 or consent of instructor; and graduate or professional standing.

### **EPID 500. Applied Methods for the Analysis of Epidemiologic Data. 4 hours.**

Students will learn how to apply, interpret and report the findings from quantitative analyses of various types of epidemiologic data, including case-control, cohort, longitudinal and meta-analysis. Course Information: Extensive computer use required. Prerequisite(s): EPID 403 and BSTT 400; or IPHS 402; or IPHS 404 and IPHS 405; or consent of the instructor. Additional course requirements: EPID 404, EPID 406, BSTT 401, and BSTT 505.

### **EPID 501. Advanced Quantitative Methods in Epidemiology. 4 hours.**

The main objective of this course is for students to learn how to quantitatively analyze an epidemiologic dataset and interpret findings in the context of theoretical causal models. Course Information: Prerequisite(s): EPID 403 and EPID 404; and BSTT 401 and BSTT 505; and consent of the instructor.

### **EPID 509. Current Topics in HIV/AIDS Research. 3 hours.**

Designed to be a collaboration among advanced students in the Graduate College and the instructor to explore, critique and analyze in depth selected topics in current research and practice around HIV/AIDS prevention. Course Information: Prerequisite(s): Grade of B or better in EPID 403 or grade of B or better in EPID 409; or consent of the instructor.

**EPID 510. Advanced Epidemiology of Infectious Diseases. 2 hours.**

Controversies regarding the etiology, transmission and prevention of selected infectious diseases. Literature reviews and study designs developed by students are a prominent part of course. Course Information: Prerequisite(s): EPID 410 or consent of instructor.

**EPID 512. Molecular Epidemiology and Biomarkers of Disease. 3 hours.**

Major theoretical concepts and practical issues involved in research involving molecular biomarkers in human populations, emphasizing examples from the cancer research literature. Course Information: Same as PATH 512. Prerequisite(s): Consent of the instructor. Recommended background: Some biology or medical background is recommended for epidemiology students taking this course.

**EPID 513. Epidemiology of Aging. 2 hours.**

Current methodologic and public health issues in the epidemiology of aging will be explored. Course Information: Prerequisite(s): EPID 401 or EPID 411; and consent of the instructor.

**EPID 515. Cancer Epidemiology. 3 hours.**

Critical review of topics and issues relevant to cancer epidemiology, to promote synthesis of current knowledge and awareness of research issues. Course Information: Prerequisite(s): EPID 401 and EPID 411; or consent of the instructor.

**EPID 516. Advanced Cancer Epidemiology. 2 hours.**

Critical review of the epidemiology of selected cancer sites to promote synthesis of knowledge, awareness of methodologic issues, and stimulate future research. Course Information: Prerequisite(s): EPID 501 and EPID 515; or consent of the instructor. Recommended background: EPID 520.

**EPID 517. Epidemiology of Cardiovascular Diseases. 2 hours.**

Epidemiology and risk factors of cardiovascular diseases. Course Information: Prerequisite(s): EPID 411 or consent of instructor.

**EPID 518. The Epidemiology of Pediatric Diseases. 3 hours.**

Provides students with experience in pediatric epi through review of seminal studies and available child health data. Condition-specific lectures include discussions of study design and methodological considerations specific to studying children. Course Information: Same as CHSC 518. Extensive computer use required. Prerequisite(s): EPID 404 and EPID 406 and BSTT 401; and graduate or professional standing; or consent of the instructor. Recommended background: EPID 501.

**EPID 519. Research Protocol and Grant Development. 1 hour.**

A review of funding options and examples of developing fundable research proposals. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): EPID 400.

**EPID 520. Genetics in Epidemiology. 2 hours.**

Topics in genetic/molecular epidemiology, including genetics, population genetics, molecular biology, molecular genetics. Familiarizes students with laboratory/statistical concepts and applications in epidemiological studies. Course Information: Prerequisite(s): EPID 401 or consent of the instructor.

**EPID 525. Social Epidemiology. 2 hours.**

Social epidemiology considers how social conventions (i.e., social arrangements and interactions) affect health. This course introduces students to central topics of social epidemiology, such as: the effects of economic policies, and climate change. Prerequisite(s): EPID 403 or IPHS 402; or IPHS 404 and IPHS 405; and Credit or concurrent registration in EPID 404; or consent of the instructor.

**EPID 526. Pharmacoepidemiology. 3 hours.**

Provides an introduction to pharmacoepidemiology and key concepts and principles that are unique to the study of medications in large populations. Course Information: Same as PSOP 526. Previously listed as PSOP 426. Extensive computer use required. Taught online. A computer with sufficient memory and Internet access is required. Prerequisite(s): EPID 400 or EPID 403 or consent of the instructor.

**EPID 529. Epidemiology of Sexually Transmitted Infections. 3 hours.**

Students in this class will examine the epidemiology of sexually transmitted infections (STIs), the etiology of the specific diseases, and how these factors are relevant to their control. Course Information: Prerequisite(s): Credit or concurrent registration in EPID 404; and graduate or professional standing; or consent of the instructor.

**EPID 530. Current Topics in Occupational and Environmental Epidemiology. 2 hours.**

Reviews the literature on health effects of environmental and occupational exposures and integrates our current knowledge with relevant policy issues. Course Information: Same as EOHS 530. Meets eight weeks of the semester. Prerequisite(s): EPID 403; or consent of the instructor.

**EPID 535. Applied Methods in Occupational Epidemiology. 2 hours.**

Provides students with knowledge of the study designs, measures, and experience in applying statistical methods commonly used in occupational epidemiology. Includes didactic lectures and case studies. Course Information: Same as EOHS 535. Extensive computer use required. Prerequisite(s): Credit or concurrent registration in EPID 404 and EPID 406 and BSTT 401; and graduate or professional standing; or consent of the instructor. Recommended background: EOHS 400.

**EPID 536. Applied Methods in Environmental Epidemiology. 2 hours.**

Provides students with experience in environmental epidemiology methodology through review of literature; discussion of study design and analysis; and analysis of existing data from the National Health and Nutrition Examination Survey. Course Information: Same as EOHS 536. Extensive computer use required. Prerequisite(s): Credit or concurrent registration in EPID 404 and EPID 406 and Credit or concurrent registration in BSTT 401; and graduate or professional standing; or consent of the instructor. Recommended background: Credit or concurrent registration in EOHS 400.

**EPID 545. Reproductive and Perinatal Health. 3 hours.**

Examines the epidemiology of key reproductive and perinatal health outcomes and cutting edge research issues. Course Information: Same as CHSC 545. Prerequisite(s): IPHS 402; and graduate or professional standing; or approval of the department.

**EPID 548. Readings in Reproductive and Perinatal Epidemiology. 3 hours.**

Advanced seminar in reproductive/perinatal epidemiology with particular emphasis on methodological issues. Course Information: Same as CHSC 548. Prerequisite(s): CHSC 511 and EPID 402 and EPID 404; and graduate or professional standing; or approval of the department. Recommended background: Maternal and child health and epidemiology.

**EPID 549. Advanced Applied Methods in MCH Epidemiology. 3 hours.**

Gives conceptual and technical understanding of statistical and epidemiological methods, builds skills/proficiency in applying these. Attention is given to data handling tasks and to statistical/epidemiologic strategies for analysis and presentation. Course Information: Same as CHSC 549. Prerequisite(s): EPID 402 or EPID 404; and BSTT 401 and EPID 406; or consent of the instructor. Recommended background: Credit or concurrent registration in EPID 501.

**EPID 550. Public Health Surveillance. 3 hours.**

Examines the fundamental public health activity known as surveillance from several angles including history, design, illustrative examples, evaluation, data analysis, and communication of findings. Course Information: Meets eight weeks of the semester. Prerequisite(s): EPID 403.

**EPID 554. Occupational and Environmental Epidemiology. 2 hours.**

Methods and issues of environmental epidemiology: outbreak, cluster analysis, cross-sectional, case-control, cohort, ecological, and time series designs; contemporary issues: cancer and reproductive hazards. Course Information: Same as EOHS 554. Prerequisite(s): EPID 401 and BSTT 401 and EOHS 400; or consent of the instructor.

**EPID 555. Outbreak Investigation and Field Epidemiology. 3 hours.**

Emphasize practical issues and decisions that arise during outbreak investigations and will try to prepare the student for participating in and leading outbreak investigations. Course Information: Meets eight weeks of the semester. Prerequisite(s): EPID 403; or consent of the instructor.

**EPID 571. Injury Epidemiology and Prevention. 3 hours.**

Covers general principles of injury epidemiology and intervention research and will engage students in development and application of preventive activities in workplaces and in the community. Course Information: Same as EOHS 571. Prerequisite(s): Grade of B or better in EPID 400 or Grade of B or better in EPID 403; and graduate or professional standing; or consent of the instructor. Recommended background: Grade of B or better in EOHS 400.

**EPID 591. Current Epidemiologic Literature. 2 hours.**

Student presentation of recently published scientific papers of epidemiologic interest, to promote breadth of knowledge and critical examination of evidence. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Prerequisite(s): EPID 401 or EPID 403 or consent of instructor.

**EPID 594. Advanced Special Topics in Epidemiology. 1-4 hours.**

Advanced special topics in substantive areas of Epidemiology (including infectious disease, chronic disease, environmental/occupational, social, methods, etc). Course content will vary with each offering. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): EPID 401 or EPID 403 or consent of instructor.

**EPID 595. Epidemiology Research Seminar. 1 hour.**

Current developments in theory and application of biostatistics and epidemiology with presentations by faculty and visiting scientists. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Prerequisite(s): Credit or concurrent registration in EPID 400 or EPID 403 or consent of the instructor.