

EPIDEMIOLOGY (EPI)

EPI 50013 CLINICAL EPIDEMIOLOGY BASICS 3 Credit Hours

(Cross-listed with PH 40013) The purpose of this course is to develop an understanding of clinical research, Good Clinical Practices, research environments, and methods used in clinical research. The student will gain an understanding of the use of clinical investigation from the product development stage to the application of investigations in contract research organization. Ethical implications and regulatory issues will be examined.

Prerequisite: BST 52019 and EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 50014 CLINICAL TRIALS MANAGEMENT 3 Credit Hours

(Crossed-listed with PH 40014) This course will further examination of the Good Clinical Practices guidelines. Students will learn how to conduct and manage clinical trials, understand clinical trials data, develop instruments and protocols, recognize quality control and data issues, know approaches to recruitment, retention, and participant assessment, identify adverse events and measurement of response variables, and acquire skill in study close-out procedures.

Prerequisite: BST 52019, EPI 52017 and EPI 63019; and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 50015 SCIENTIFIC WRITING FOR CLINICAL RESEARCH 3 Credit Hours

(Cross-listed with PH 40015) Clinical researchers must be able to demonstrate skill in scientific writing to communicate findings to the science community and the general population. This course will allow students to develop proficiency in scientific reading, conducting presentations, and writing. It will include examination of the science literature in clinical trials research.

Prerequisite: Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 50017 PHARMACOEPIDEMIOLOGY 3 Credit Hours

(Cross-listed with PH 40017) This course is an introduction to the field of pharmacoepidemiology. Pharmacoepidemiology uses epidemiology methods to understand medication use and distribution at the population level. The class will examine risk-benefit and epidemiology approaches to examining medication use and therapeutic trials. Drug and device manufacturing to market will be explored.

Prerequisite: BST 52019 and EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 50018 REGULATORY AFFAIRS IN CLINICAL RESEARCH 3 Credit Hours

(Cross-listed with PH 40018) Students will develop an understanding of the researcher and organization responsibility in research and development of clinical trials products. Students will understand regulations from the government and industry, privacy concerns, liability, and ethical issues related to clinical trials research. Examples from the field will be explored in detail.

Prerequisite: EPI 52017.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 50196 INDIVIDUAL INVESTIGATION IN EPIDEMIOLOGY 1-3 Credit Hours

(Repeatable for maximum 6 credits) Individual graduate investigation or research in areas related to epidemiology.

Prerequisite: Graduate standing and special approval.

Schedule Type: Individual Investigation

Contact Hours: 1-3 other

Grade Mode: Standard Letter-IP

EPI 52017 FUNDAMENTALS OF PUBLIC HEALTH EPIDEMIOLOGY 3 Credit Hours

(Slashed with EPI 72017) Introduces principles, methods, and application of epidemiology. Covers the history of epidemiology, concepts of disease causation and prevention, measures of disease frequency and excessive risk, epidemiologic study designs, causal inference, outbreak investigation and screening. Provides experience with calculation of rate standardization, measures of disease frequency, association, and impact, and sensitivity and specificity of screening tests. Highlights applications of epidemiology to understanding of disease etiology, transmission, pathogenesis, and prevention, evaluation and public policy development.

Prerequisite: Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 52028 METHODS OF EVIDENCE BASED PUBLIC HEALTH 3 Credit Hours

(Slashed with EPI 72028) Explores tools and techniques used to quantitatively determine the effectiveness of public health interventions in the social sciences.

Prerequisite: Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 60191 VARIABLE CONTENT SEMINAR IN EPIDEMIOLOGY 1-3 Credit Hours

(Repeatable for credit) (Cross-listed with EPI 80191) Seminar on current and important topics in epidemiology. Subject matter varies depending on the topic.

Prerequisite: Graduate standing.

Schedule Type: Seminar

Contact Hours: 1-3 lecture

Grade Mode: Standard Letter

EPI 60192 PRACTICUM EXPERIENCE IN EPIDEMIOLOGY 1-6 Credit Hours

Observational and participation in public health activities of a public health agency, hospital or other approved organization. The student completes the field experience with joint supervision from the university and approved organization or agency.

Prerequisite: Graduate standing and special approval.

Schedule Type: Practicum or Internship

Contact Hours: 20 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 60195 SPECIAL TOPICS IN EPIDEMIOLOGY 1-3 Credit Hours

(Repeatable for a maximum 6 credit hours) (Slashed with EPI 80195) Special topics to sample new offerings on topics in epidemiology.

Prerequisite: Graduate standing.

Schedule Type: Lecture

Contact Hours: 1-3 lecture

Grade Mode: Standard Letter

EPI 63014 EPIDEMIOLOGY OF CHRONIC DISEASES 3 Credit Hours

(Slashed with EPI 83014) With a life course approach to chronic disease epidemiology, this course focuses on cardiovascular, respiratory, cerebrovascular diseases and cancer. Health and disease are addressed from a multicausal perspective which includes individual behaviors, psychosocial issues, and sociodemographic, biological, and physiological factors. Time points for prevention and intervention are identified.

Prerequisite: EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63015 EPIDEMIOLOGY OF INFECTIOUS DISEASES 3 Credit Hours

(Slashed with EPI 83015) Surveys the history, principles, methods and practice of infectious disease epidemiology, by (1) defining and understanding infectious disease epidemiology surveys, (2) collecting and measuring surveillance data, (3) interpreting epidemiology data and (4) predicting evidence-based outcomes. Primarily a course in epidemiology. Students learn some infectious disease microbiology as well. Prerequisite EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63016 PRINCIPLES OF EPIDEMIOLOGIC RESEARCH 3 Credit Hours

(Slashed with EPI 83016) Builds on the fundamental epidemiology course to explore deeper the concepts and methods in epidemiologic research. Reviews the measures of disease frequency, association and impact, and epidemiologic reasoning and causal inference, and covers methods and techniques for designing, implementing, analyzing, and interpreting various epidemiologic study designs. Discusses advantages and limitations of various study designs and explores threats to validity, precision, and generalizability of epidemiologic studies.

Prerequisite: BST 52019 and EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63017 EPIDEMIOLOGICAL ANALYSIS 3 Credit Hours

(Slashed with EPI 83017) Provides practical instruction in the analysis and interpretation of data from various epidemiologic study designs including cross-sectional, case-control and cohort studies. Reviews statistical concepts and epidemiologic studies designs, outlines a strategy for data analysis and reviews relevant methodologic issues and applies stratified analysis methods and multivariable regression models to the studies. Develops an understanding of the underlying principles and assumptions, practical application, and correct interpretation of the epidemiologic results. Provides hands on experience on the application of epidemiologic analysis methods and presentation of the results.

Prerequisite: BST 52019 and BST 63014; and EPI 52017 and 63016; and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63018 OBSERVATIONAL DESIGNS FOR CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 83018) This class provides students the skill to design, conduct, and perform clinical epidemiology studies using an observational design. Students will understand major concepts of clinical research, develop clinical research questions, and solve clinical research problems. Topics will include: Study design, risk, causation, exposures, bias, measurement and validity, and disease prognosis.

Prerequisite: EPI 52017 and BST 52019 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63019 EXPERIMENTAL DESIGNS FOR CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 83019) Principles of experimental designs as they apply to clinical research and clinical trials will be presented at an intermediate level. Students will understand randomized control trial designs and alternative designs. Study methodology including randomization and blinding techniques will be covered. Topics will include: Evidence-based medicine, risk prediction and risk scores, instruments and measurement, data issues, and recruitment, retention, and adherence.

Prerequisite: EPI 63018 and Graduate standings.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63020 ADVANCED EPIDEMIOLOGY AND CLINICAL RESEARCH METHODS 3 Credit Hours

(Slashed with EPI 83020) This advanced class will focus on why particular methods, study designs, or approaches are used in particular investigative scenarios in clinical research. Students will develop and advanced understanding and application of epidemiology methods in clinical research.

Prerequisite: EPI 63018 and EPI 63019 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63021 ETHICAL ISSUES IN PUBLIC HEALTH AND CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 83021) Introduces students to historical and contemporary ethical issues that arise during public health and clinical or biomedical research studies. Broadly covers human subjects research, the responsible conduct of research, and the Good Clinical Practice Guidelines.

Prerequisite: EPI 52017 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63034 LONGITUDINAL DATA ANALYSIS 3 Credit Hours

(Slashed with EPI 73034) Statistical techniques for analyzing longitudinal, or repeated measures, data. Focuses primarily on application of the various statistical models covered, with direct application illustrated using standard statistical software. Topics covered include univariate and multivariate analysis of variance for repeated measures, mixed-effects models (HLM or multilevel models), covariance pattern models, generalized estimating equations (GEE), mixed-effects logistic regression models and missing data in longitudinal studies.

Prerequisite: BST 52019 and 63014 and Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 63192 RESEARCH PRACTICUM IN CLINICAL EPIDEMIOLOGY 1-6 Credit Hours

Research practicum allows students to gain hands on experience conducting research in a clinical setting such as a hospital or other approved organization. The student completes the experience under the supervision of a field preceptor and faculty member.

Prerequisite: EPI 63018 and EPI 63019 and Graduate standing.

Schedule Type: Practicum or Internship

Contact Hours: 3-18 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 63199 THESIS I 2-6 Credit Hours

Student must register for a total of 6 credit hours in the program. Student may register for 2 to 6 hours in a single semester

Prerequisite: Graduate standing.

Schedule Type: Masters Thesis

Contact Hours: 2-6 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 63299 THESIS II 2 Credit Hours

Thesis students must continue registration in Thesis II each semester until all degree requirements are met.

Prerequisite: EPI 63199 and Graduate standing.

Schedule Type: Masters Thesis

Contact Hours: 2 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 72017 FUNDAMENTALS OF PUBLIC HEALTH EPIDEMIOLOGY 3 Credit Hours

(Slashed with EPI 52017) Introduces principles, methods, and application of epidemiology. Covers the history of epidemiology, concepts of disease causation and prevention, measures of disease frequency and excessive risk, epidemiologic study designs, causal inference, outbreak investigation and screening. Provides experience with calculation of rate standardization, measures of disease frequency, association, and impact, and sensitivity and specificity of screening tests. Highlights applications of epidemiology to understanding of disease etiology, transmission, pathogenesis, and prevention, evaluation and public policy development.

Prerequisite: Graduate standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 72028 METHODS OF EVIDENCE BASED PUBLIC HEALTH 3 Credit Hours

(Slashed with EPI 52058) Explores tools and techniques used to quantitatively determine the effectiveness of public health interventions in the social sciences.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73024 EMERGING ISSUES IN CHRONIC DISEASE EPIDEMIOLOGY 3 Credit Hours

Covers emerging chronic disease issues on a global level and students understand the life course approach to chronic disease epidemiology. Putative factors and infectious agents are examined as causes of chronic disease and chronic syndromes. Issues related to screening and surveillance will be understood. Students appreciate issues pertaining to study design, modeling, and data analysis in life course epidemiology of chronic disease.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73025 EMERGING ISSUES IN INFECTIOUS DISEASE EPIDEMIOLOGY 3 Credit Hours

Investigates global emerging and reemerging infectious diseases. Students evaluate root causes of infectious disease emergence and predict outcomes. Data from primary literature is used to predict alternate outcomes. Specific disease models are used to evaluate and compare prevention, treatment and eradication strategies.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73026 DESIGN AND IMPLEMENTATION OF HEALTH SURVEYS 3 Credit Hours

Covers survey design, variable construction, survey administration and data collection methods, variable coding and manipulation, and data analysis. Students will understand sampling methods, and sample size. Large health surveys are discussed. Students gain practical experience through design and implementation of a health survey which can be used to facilitate dissertation research or a publication.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73027 BIOLOGICAL BASIS OF PUBLIC HEALTH 3 Credit Hours

Integrates the sciences of biology and molecular biology into the principles and practice of public health. Implicit in this course are learning objectives that establish the ecology of infectious disease, the impact of vaccines in disease prevention, and the role of environmental toxins on human health and disease. Additionally, students propose policy, regulations and legislation designed to protect human health within the realm of personalized medicine.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73029 PUBLIC HEALTH SURVEILLANCE SYSTEMS 3 Credit Hours

Introduces students to surveillance systems of both infectious and non-infectious diseases as well as intentional and non-intentional injury. Students are exposed to the theory and practice of surveillance illustrated with examples existing systems from around the world. Culminates in a project where the student creates and evaluates a surveillance system of their own design.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73033 ENVIRONMENTAL EPIDEMIOLOGY 3 Credit Hours

Comprehensive course on concepts in environmental epidemiology and statistical methods in environmental epidemiology including causal inference models.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 73034 LONGITUDINAL DATA ANALYSIS 3 Credit Hours

(Slashed with EPI 63034) Statistical techniques for analyzing longitudinal, or repeated measures, data. Focuses primarily on application of the various statistical models covered, with direct application illustrated using standard statistical software. Topics covered include univariate and multivariate analysis of variance for repeated measures, mixed-effects models (HLM or multilevel models), covariance pattern models, generalized estimating equations (GEE), mixed-effects logistic regression models and missing data in longitudinal studies.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 80191 VARIABLE CONTENT SEMINAR IN EPIDEMIOLOGY 1-3 Credit Hours

(Repeatable for a maximum of 6 credit hours) (Slashed with EPI 60191) Seminar on current and important topics in epidemiology. Subject matter varies depending on the topic.

Prerequisite: Doctoral standing.

Schedule Type: Seminar

Contact Hours: 1-3 lecture

Grade Mode: Standard Letter

EPI 80195 SPECIAL TOPICS IN EPIDEMIOLOGY 1-3 Credit Hours

(Repeatable for a maximum of 6 credit hours) (Cross-listed with EPI 60195) Special topics to sample new offerings on topics in epidemiology.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 1-3 lecture

Grade Mode: Standard Letter

EPI 80196 INDIVIDUAL INVESTIGATION IN EPIDEMIOLOGY 1-3 Credit Hours

Individual graduate investigation or research in areas related to epidemiology.

Prerequisite: Doctoral Standing and special approval.

Schedule Type: Individual Investigation

Grade Mode: Standard Letter-IP

EPI 80198 DIRECTED RESEARCH IN EPIDEMIOLOGY 1-15 Credit Hours

(Repeatable for credit) Directed research or individual investigation for doctoral students in Epidemiology concentration. Satisfactory/unsatisfactory (S/U) graded; in-progress (IP) mark permissible.

Prerequisite: Doctoral standing and special approval from department.

Schedule Type: Individual Investigation, Research

Contact Hours: 1-15 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 80199 DISSERTATION I 15 Credit Hours

(Repeatable for credit) Registration for two semesters required, first semester dissertation work begins and continues until completion of Dissertation II and 30 hours of total dissertation work.

Prerequisite: Doctoral standing and special approval.

Schedule Type: Dissertation

Contact Hours: 15 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 80299 DISSERTATION II 15 Credit Hours

(Repeatable for credit) Second course of dissertation sequence completing requirement of with 30 total hours of dissertation work.

Prerequisite: EPI 80199 and Doctoral standing and special approval.

Schedule Type: Dissertation

Contact Hours: 15 other

Grade Mode: Satisfactory/Unsatisfactory-IP

EPI 83014 EPIDEMIOLOGY OF CHRONIC DISEASES 3 Credit Hours

(Slashed with EPI 63014) With a life course approach to chronic disease epidemiology, this course focuses on cardiovascular, respiratory, cerebrovascular diseases and cancer. Health and disease are addressed from a multicausal perspective which includes individual behaviors, psychosocial issues, and sociodemographic, biological, and physiological factors. Time points for prevention and intervention are identified.

Prerequisite: EPI 52017 and Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83015 EPIDEMIOLOGY OF INFECTIOUS DISEASES 3 Credit Hours

(Slashed with EPI 63015) Surveys the history, principles, methods and practice of infectious disease epidemiology, by (1) defining and understanding infectious disease epidemiology surveys, (2) collecting and measuring surveillance data, (3) interpreting epidemiology data and (4) predicting evidence-based outcomes. Primarily a course in epidemiology. Students learn some infectious disease microbiology as well.

Prerequisite: EPI 52017 and Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83016 PRINCIPLES OF EPIDEMIOLOGIC RESEARCH 3 Credit Hours

(Slashed with EPI 63016) Builds on the fundamental epidemiology course to explore deeper the concepts and methods in epidemiologic research. Reviews the measures of disease frequency, association and impact, and epidemiologic reasoning and causal inference, and covers methods and techniques for designing, implementing, analyzing, and interpreting various epidemiologic study designs. Discusses advantages and limitations of various study designs and explores threats to validity, precision, and generalizability of epidemiologic studies.

Prerequisite: BST 52019 and EPI 52017; and Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83017 EPIDEMIOLOGICAL ANALYSIS 3 Credit Hours

(Slashed with EPI 63017) Provides practical instruction in the analysis and interpretation of data from various epidemiologic study designs including cross-sectional, case-control and cohort studies. Reviews statistical concepts and epidemiologic studies designs, outlines a strategy for data analysis and reviews relevant methodologic issues and applies stratified analysis methods and multivariable regression models to the studies. Develops an understanding of the underlying principles and assumptions, practical application, and correct interpretation of the epidemiologic results. Provides hands-on experience on the application of epidemiologic analysis methods and presentation of the results.

Prerequisite: EPI 63016 and BST 83014 and Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83018 OBSERVATIONAL DESIGNS FOR CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 63018) This class provides students the skill to design, conduct, and perform clinical epidemiology studies using an observational design. Students will understand major concepts of clinical research, develop clinical research questions, and solve clinical research problems. Topics will include: Study design, risk, causation, exposures, bias, measurement and validity, and disease prognosis.

Prerequisite: EPI 52017 and BST 52019; Doctoral standing; and special approval.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83019 EXPERIMENTAL DESIGNS FOR CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 63019) Principles of experimental designs as they apply to clinical research and clinical trials will be presented at an intermediate level. Students will understand randomized control trial designs and alternative designs. Study methodology including randomization and blinding techniques will be covered. Topics will include: Evidence-based medicine, risk prediction and risk scores, instruments and measurement, data issues, and recruitment, retention, and adherence.

Prerequisite: EPI 52017 and BST 52019 and Doctoral standing and special approval.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83020 ADVANCED EPIDEMIOLOGY AND CLINICAL RESEARCH METHODS 3 Credit Hours

(Slashed with EPI 63020) This advanced class will focus on why particular methods, study designs, or approaches are used in particular investigative scenarios in clinical research. Students will develop and advanced understanding and application of epidemiology methods in clinical research.

Prerequisite: EPI 83018 and EPI 83019; Doctoral standing and special approval.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

EPI 83021 ETHICAL ISSUES IN PUBLIC HEALTH AND CLINICAL RESEARCH 3 Credit Hours

(Slashed with EPI 63021) Introduces students to historical and contemporary ethical issues that arise during public health and clinical or biomedical research studies. Broadly covers human subjects research, the responsible conduct of research, and the Good Clinical Practice Guidelines.

Prerequisite: EPI 52017 and Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture, 3 lab

Grade Mode: Standard Letter