

EPIDEMIOLOGY (EPI)

EPI 50015 SCIENTIFIC WRITING FOR CLINICAL RESEARCH 3 Credit Hours

(Cross-listed with PH 40015) Course provides students the tools to develop proficiency in scientific reading, to conduct presentations and to demonstrate skill in scientific writing, with the goal of preparing clinical researchers to be able to communicate findings to the science community and the general population. Course includes an 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) Introduction to the field of pharmacoepidemiology, which uses epidemiology methods to understand medication use and distribution at the population level. Course examines risk-benefit and epidemiology approaches to examining medication use and therapeutic trials. Drug and device manufacturing to market are 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) Course provides the tools for students to develop an understanding of the researcher and organization responsibility in research and development of clinical trials products. Students understand regulations from the government and industry, privacy concerns, liability and ethical issues related to clinical trials research. Examples from the field are 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 53089 PLAGUES THAT SHAPED THE WORLD 3 Credit Hours

(Slashed with EPI 73089) (Cross-listed with PH 43089) Course examines the Bubonic plague, HIV/AIDS, Ebola and pandemic influenza outbreaks to introduce students to the fundamentals of public health, establishing epidemiological principles that explain how plagues erupt and propagate, decimate populations and alter cultures. Inherent in the course's discussion are the social determinants that fuel plague outbreaks and slow recovery. Examples of emerging infectious diseases and threats of bioterrorism are discussed as new plagues for which creative solutions are still required. Students take city excursions and a field trip to assess cultural changes resulting from historical plagues.

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) (Slashed 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 APPLIED PRACTICE EXPERIENCE IN EPIDEMIOLOGY 3,6 Credit Hours

(Repeatable for credit) Observational and participation in public health activities of a public health agency, hospital or other approved organization. Students complete a field experience with joint supervision from the university and approved organization or agency.

Prerequisite: Graduate standing; and special approval.

Schedule Type: Practical Experience

Contact Hours: 3-18 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) Course builds upon EPI 52017 to explore deeper the concepts and methods in epidemiologic research. Reviews the measures of disease frequency; association and impact; epidemiologic reasoning and causal inference; and methods and techniques for designing, implementing, analyzing and interpreting various epidemiologic study designs. Discusses advantages and limitations of various study designs. 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 EPI 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) Course provides students the skills to design, conduct and perform clinical epidemiology studies using an observational design. Students understand major concepts of clinical research, develop clinical research questions, and solve clinical research problems. Topics include study design, risk, causation, exposures, bias, measurement and validity and disease prognosis.

Prerequisite: BST 52019 and EPI 52017; 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 are presented at an intermediate level. Students understand randomized control trial designs and alternative designs. Study methodology, including randomization and blinding techniques, is covered. Topics include evidence-based medicine; risk prediction and risk scores; instruments and measurement; data issues; and recruitment, retention and adherence.

Prerequisite: EPI 63018; and graduate standing.

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 course focuses on why particular methods, study designs or approaches are used in particular investigative scenarios in clinical research. Students develop an 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 BST 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. Students complete the experience under the supervision of a field preceptor and faculty member.

Prerequisite: EPI 63018 and EPI 63019; and graduate standing.

Schedule Type: Practical Experience

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: Doctoral 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 52028) 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 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 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 73089 PLAGUES THAT SHAPED THE WORLD 3 Credit Hours

(Slashed with EPI 53089)(Cross-listed with PH 43089) Course examines the Bubonic plague, HIV/AIDS, Ebola and pandemic influenza outbreaks to introduce students to the fundamentals of public health, establishing epidemiological principles that explain how plagues erupt and propagate, decimate populations and alter cultures. Inherent in the course's discussion are the social determinants that fuel plague outbreaks and slow recovery. Examples of emerging infectious diseases and threats of bioterrorism are discussed as new plagues for which creative solutions are still required. Students take city excursions and a field trip to assess cultural changes resulting from historical plagues.

Prerequisite: Doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture, 3 lab

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) (Slashed 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

Contact Hours: 3-9 other

Grade Mode: Standard Letter-IP

EPI 80198 DIRECTED RESEARCH IN EPIDEMIOLOGY 1-15 Credit Hours

(Repeatable for credit) Directed research or individual investigation in an area of interest and with the guidance of a Kent State faculty member.

Prerequisite: Doctoral standing; and special approval.

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 72017; 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 72017; 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) Course builds upon EPI 52017 to explore deeper the concepts and methods in epidemiologic research. Reviews the measures of disease frequency; association and impact; epidemiologic reasoning and causal inference; and methods and techniques for designing, implementing, analyzing and interpreting various epidemiologic study designs. Discusses advantages and limitations of various study designs. Explores threats to validity, precision and generalizability of epidemiologic studies.

Prerequisite: BST 52019 and EPI 72017; 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: BST 83014 and EPI 63016; 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) Course provides students the skills to design, conduct and perform clinical epidemiology studies using an observational design. Students understand major concepts of clinical research, develop clinical research questions, and solve clinical research problems. Topics include study design, risk, causation, exposures, bias, measurement and validity and disease prognosis.

Prerequisite: BST 52019 and EPI 72017; and 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 are presented at an intermediate level. Students understand randomized control trial designs and alternative designs. Study methodology, including randomization and blinding techniques, is covered. Topics include evidence-based medicine; risk prediction and risk scores; instruments and measurement; data issues; and recruitment, retention and adherence.

Prerequisite: BST 52019 and EPI 72017; 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 course focuses on why particular methods, study designs or approaches are used in particular investigative scenarios in clinical research. Students develop an advanced understanding and application of epidemiology methods in clinical research.

Prerequisite: EPI 83018 and EPI 83019; and 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 72017; and doctoral standing.

Schedule Type: Lecture

Contact Hours: 3 lecture, 3 lab

Grade Mode: Standard Letter