

Graduate Certificate: Health Outcomes and Measurement Science

COLLEGE OF PUBLIC HEALTH

Learn more about the graduate certificate in Health Outcomes and Measurement Science.

About the Certificate

The Health Outcomes and Measurement Science (HOMS) graduate certificate is an interdisciplinary 12-credit certificate program offered online. Students are encouraged to take classes together in groups, which facilitates career networking and enhances the learning environment as colleagues and classmates collaborate with those from different disciplines and organizations. The certificate program is designed for clinical practitioners and researchers as well as industry-outcomes specialists who are interested in integrating evidence-based health outcomes into their clinical practice, work, or research, including athletic trainers, counselors, health services researchers, nurses, occupational therapists, pastoral counselors, physical therapists, physicians, psychiatrists, psychologists, recreational therapists, and social workers.

Students who complete the certificate gain an improved understanding of health models; survey methods; and the development, application, and interpretation of person-centered health outcomes within clinical and research applications to advance their practice and research. Successful completion of the HOMS graduate certificate enables graduates to:

- describe models of health and their use as a basis for outcome measure development in health applications;
- apply modern approaches, including mixed methods, in the development of person-centered health outcome measures; and
- interpret and understand the psychometric properties of person-reported health outcome measures.

Time Limit for Certificate Completion: 2 years

Campus Location: Online

Full-Time/Part-Time Status: The graduate certificate may be completed on a part-time basis, but all courses should be finished within a two-year period.

Non-Matriculated Student Policy: The certificate program is open to non-matriculated graduate students.

Admission Requirements and Deadlines

Application Deadline:

Fall and Spring admissions are on a rolling basis. The admissions process for this graduate certificate varies depending on the applicant's student status:

- Those who are **not currently a matriculated graduate student at Temple University**, first submit the inquiry form found at <https://cphadmissions.temple.edu/inquiryform>. They then complete the College of Public Health's online graduate certificate application.
- Students who are **currently matriculated** as a Temple University graduate student can complete the inquiry form and provide transcripts and recommendations, but are not required to complete a graduate certificate application.

Letters of Reference:

Number Required: 2

From Whom: Recommendations are required to be submitted on the professional Reference Report for Graduate Study form by individuals who have observed and can evaluate your leadership competencies and abilities. Evaluators should be those whom you know in a professional capacity such as faculty member, supervisor, colleague, co-worker in another department who interacts with you in a professional capacity, or the like. At least one recommendation should be from an academic who can evaluate your ability to complete graduate coursework.

Bachelor's Degree in Discipline/Related Discipline: Applicants must hold a baccalaureate degree. Official transcripts must be submitted for all postsecondary institutions attended.

Standardized Test Scores:

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master's degree at a U.S. institution, must report scores for a standardized test of English that meet these minimums:

- TOEFL iBT: 79
- IELTS Academic: 6.5
- PTE Academic: 53

Resume: Current CV required.

Certificate Requirements

Number of Credits Required to Complete the Certificate: 12

Required Courses:

Code	Title	Credit Hours
EPBI 8302	Behavioral Measurement ¹	3
HRPR 8001	Introduction to Health Outcomes Measurement Science	3
HRPR 8002	Qualitative Methods in Health Outcomes Measurement	3
HRPR 8003	Quantitative Methods in Health Outcomes Measurement Science	3
Total Credit Hours		12

¹ EPBI 8302 is third in the course sequence for the certificate program. HRPR 8001 is taken first, followed by HRPR 8002, EPBI 8302, and HRPR 8003.

GPA Required to be Awarded the Certificate: 3.0 minimum

Contacts

Certificate Program Web Address:

<https://www.temple.edu/academics/degree-programs/health-outcomes-and-measurement-science-certificate-graduate-hp-homs-grad>

Admissions Information:

College of Public Health Office of Admissions
1101 W. Montgomery Avenue, Suite 370
Philadelphia, PA 19122-2715
cph@temple.edu
215-204-5200

Submission Address for Application Materials:

HOMS Graduate Certificate Program
College of Public Health Office of Admissions
1101 W. Montgomery Avenue, Suite 370
Philadelphia, PA 19122-2715

Department Contacts:

Admissions:
CPH Office of Admissions
cph@temple.edu
215-204-5200

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Epidemiology and Biostatistics Courses

EPBI 5001. Biostatistics for Health Professions. 3 Credit Hours.

This course is for graduate students in nursing and other health-related professions and is meant to teach students the common biostatistical tools used to analyze, present and interpret health-related data. The course will cover topics including data summary and visualization, descriptive statistics, sampling and confidence intervals, hypothesis testing, diagnostic tests, and inference related to t-test, ANOVA, simple and multiple regression, nonparametric tests and measurement agreements. Statistical processing through the program SPSS will be integrated into the program and used in tandem with critical principles needed for effective statistical decision making. At the conclusion of the course, students will be able to analyze real data sets and provide quantitative evidence to support scientific conclusions.

Level Registration Restrictions: May not be enrolled in one of the following Levels: Undergraduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 5002. Biostatistics. 3 Credit Hours.

Students will review fundamentals of descriptive statistics, estimation, and hypothesis testing. More advanced influential methods will be introduced, including, but not limited to, regression and correlation and analysis of variance. At the conclusion of the course, students will be able to analyze real data sets and provide quantitative evidence to support scientific conclusions. The emphasis is on "doing" statistics utilizing sound statistical theory and relying on validated statistical software (SAS/SPSS) to produce descriptive statistics and inferential analyses, and interpret the results.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 5003. Spatial Analysis in Public Health. 3 Credit Hours.

This course will create a methodological framework for approaching public health issues within the context of spatial investigations of health and disease, both internally via perceptual mapping, and externally via geographic information systems (GIS). This integrative discipline provides the opportunity for students to draw upon the concepts and techniques of sound public health and add a spatial perspective to their analysis.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 5005. Applied Analysis of Health. 1.5 Credit Hour.

This lab course will focus on integrating concepts from biostatistics, epidemiology, environmental health, health policy, and social and behavioral health through hands-on data analysis and presentation techniques using SAS statistical software. Modules will also include SPSS and qualitative software. Labs will immerse students in applied exercises so they more fully understand the statistical principles presented in the co-requisite lecture course (EPBI 5002) as well become comfortable assessing available data and producing data-driven public health materials for various audiences. Each lab session includes exercises to help students more fully understand the statistical and analytic principles. It also re-enforces material covered in EPBI 5101, EPBI 5201, and EPBI 5002.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health.

Co-requisites: EPBI 5002.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5101|Minimum Grade of B-|May be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May be taken concurrently.

EPBI 5101. Fundamentals of Epidemiology. 3 Credit Hours.

The main purpose of this course is to provide an understanding of the basic methods and tools used by epidemiologists to study the health of populations. This course provides a graduate-level introduction to the fundamental concepts and methods used in epidemiology, the basic science of public health and prevention. This course covers terminology used in epidemiology; basic measures of frequency of disease occurrence; concepts of exposure, outcome, and association; epidemiologic study designs; epidemiologic criteria for causality; potential sources of bias and controlling for bias; and the role of epidemiology in public health policy. Applications related to a broad range of current epidemiologic studies are discussed. Students will calculate basic statistics used in epidemiologic studies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 5201. Epidemiological Research Methods I. 3 Credit Hours.

This course provides an introduction to the fundamentals of conducting epidemiologic research and protocol development. It covers definitions of epidemiology; measures of disease frequency and risk assessment; measures of effect and association; epidemiologic study designs, including randomized clinical trials, cohort, case-control studies, and cross-sectional surveys; assessment of screening programs; an overview of the role of bias and confounding in epidemiologic study results; and analytic techniques, including modeling using multiple variables, survival analysis, and issues related to quality assurance. Note: This course is the introductory epidemiology course for students in the M.S. in Epidemiology or related Public Health degree programs that require advanced quantitative methods. May be taken in place of EPBI/PBHL 5101 for students in the M.P.H., M.S. in Environmental Health and Ph.D. programs.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 5204. Mental Health Epidemiology. 3 Credit Hours.

Epidemiology of psychiatric disturbances is explored, including alcohol and other drug dependencies, psychosocial aspects of health and illness. The emphasis is on epidemiologic methods and theories in psychosocial and mental health research.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Social Work.

Repeatability: This course may not be repeated for additional credits.

EPBI 5500. Seminar in Current Issues in Public Health. 3 Credit Hours.

Seminar topics rotate to address current issues in public health research, policy and practice.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Social Work.

Repeatability: This course may be repeated for additional credit.

EPBI 8002. Research Seminar in Public Health. 3 Credit Hours.

This is a research seminar on linkages between theory and research in social and behavioral health studies. It is required for Ph.D. students prior to taking the preliminary examinations.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 8011. Social Epidemiology. 3 Credit Hours.

The purpose of this course is to provide an introduction for graduate students to the key social factors that are thought to influence health. These social factors include constructs such as gender, race, socioeconomic status, and social support. Understanding these social factors is important for public health research and practice. These factors can be considered "fundamental causes" of health outcomes insofar as they may cause or modify other factors that are known to influence health, such as individual behaviors or genetics. The course will focus on the conceptual and theoretical basis of these social factors, how these social factors are measured in epidemiologic research, and the mechanisms by which these social factors are thought to affect health. Students will have the opportunity to improve their skills in critically evaluating empirical data about the association between these social factors and health.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Social Work.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5101|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5101|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8012. Multivariable Biostatistics. 3 Credit Hours.

The objective of the course is to provide basic theory and application of regression models, analysis of variance, nonparametric statistics, and survival analysis applied to the analysis of population-based data. The emphasis will be on generating and interpreting results and health related applications rather than on statistical theory. The course is designed for graduate students in public health who are already familiar with basic statistical concepts, including descriptive statistics, the components of statistical inference (p-values, hypothesis tests, confidence intervals, etc.), as well as concepts of confounding and effect modification.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5002|Minimum Grade of B-|May not be taken concurrently

OR PBHL 5002|Minimum Grade of B-|May not be taken concurrently.

EPBI 8201. Structural Equation Modeling. 3 Credit Hours.

An extremely rapid pace of change in statistics and methodology in the field of developmental processes and family systems requires that graduate students (and newly minted PhDs in academic and applied settings) be well versed in current data analytic techniques and able to keep abreast of emergent techniques by being aware of contemporary methodological literature. This course will illustrate the uses of structural equation models for cross-sectional, longitudinal, and family data analysis. The course is organized to take participants through each of the cumulative steps in the analysis: deciding which type of model is appropriate, setting up the data file and coding variables, interpreting and displaying empirical findings, and presenting results in both verbal and written form. Class time will be devoted primarily to lectures, examples, group discussions, and hands-on application of course material.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 8202. Epidemiological Research Methods II. 3 Credit Hours.

The content of this course illustrates statistical concepts, methods, and strategies used in epidemiologic studies, beyond the principles discussed in EPBI/PBHL 5201 (Epidemiological Research Methods 1). Topics include a review of basic study designs, analysis of prospective and retrospective data, assessment of bias, confounding, effect modification/interaction, statistical methods of stratification and adjustment, sample size/power calculations, importance of quality control and data monitoring in randomized clinical trials, critical determination of causality, and the comprehensive analyses, reporting and presentation of epidemiologic results.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5201|Minimum Grade of B-|May not be taken concurrently

OR PBHL 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8204. Multilev Mod in Int Res. 3 Credit Hours.

Interdisciplinary research nearly always involves data with a nested, hierarchical, or multilevel structure. Such data violate the standard statistical assumption of independence of observations. As well, the most important interdisciplinary research questions often involve understanding effects of one level of this structure on characteristics of another level of structure. Within the intervention contexts, individuals often serve as their own context as events unfold over chronological time. This course provides a broad and comprehensive introduction to analysis of multilevel data with an emphasis on questions which bridge disciplines. Participants should be familiar with the general linear model (analysis of variance, regression) prior to enrolling in this course, but no previous familiarity with mixed models (other than repeated measures ANOVA) is assumed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 8205. Chronic Disease Epidemiology. 3 Credit Hours.

This intermediate course will cover selected topics in chronic disease epidemiology through critical examination of the current literature. Students will have the opportunity to study methodological issues, strategies for prevention, and contemporary issues in research. Coronary heart disease, cancer, diabetes, musculoskeletal disorders, chronic lung diseases and others will be addressed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

SBS 5102|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5102|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8206. Infectious Disease Epidemiology. 3 Credit Hours.

This course provides the basis for understanding infectious diseases, disease transmission, risk factors, outbreak investigation and study designs, surveillance methods, and current infection-control strategies and mechanisms. The purpose of this course is to expose students to the principles and practices of infectious disease epidemiology and how communicable diseases and their control affect public health locally, nationally, and internationally.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

SBS 5102|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5102|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8207. Reproductive and Perinatal Epidemiology. 3 Credit Hours.

This course presents the epidemiology of major reproductive and perinatal outcomes and offers an overview of human reproduction. The course will be divided into two parts. Part one covers the basic principles of reproductive biology and physiology. The second part will focus on outcomes in reproductive and perinatal research including fertility and fecundity, reproductive disorders, birth defects, preterm birth, fetal growth, miscarriage, stillbirth, and preeclampsia. The course will discuss unique methodological issues and novel study designs in reproductive and perinatal epidemiology. An emphasis of the course will be the evaluation of the current literature related to reproductive and perinatal complications as well as the design of a reproductive or perinatal epidemiologic study.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5101|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8208. Data Management and Analysis. 3 Credit Hours.

The content of this course will illustrate practical concepts, methods, and strategies used in the development, management and analysis of large data sets through in-class and homework exercises, quizzes, and a final project. Each class session will be a mixture of a lecture, demonstration and hands-on SAS programming exercises.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5002|Minimum Grade of B-|May not be taken concurrently
OR EPBI 8012|Minimum Grade of B-|May not be taken concurrently.

EPBI 8209. Epidemiology of HIV/AIDS. 3 Credit Hours.

The epidemiology of HIV/AIDS is the subject of this course. Application of epidemiological principles and concepts in infectious disease epidemiology with emphasis on surveillance, research, prevention, and control are covered.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5101|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5101|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently
OR PBHL 5201|Minimum Grade of B-|May not be taken concurrently.

EPBI 8212. Grantsmanship in Health Research. 3 Credit Hours.

This course will provide students with applied advanced epidemiologic research methods to critically assess gaps in current knowledge and to develop a competitive grant proposal application. Students will apply the epidemiologic methods and knowledge from prior courses and gain expertise in assessing gaps in knowledge, innovative thinking, grant conception, development and writing, study implementation and approach, budget preparation, and grant critiques. In the first half of the course, students will be introduced to the concepts of significance and innovation, identifying gaps in knowledge, choosing an epidemiologic research topic, identifying a funding agency and developing a set of specific aims, significance and innovation statements. In the second half of the course, the grant proposal will be written in the format of an NIH pre-doctoral epidemiology research grant following NIH grant application guidelines including a developed research plan, identified research team, and NIH biosketch and human subject protection plans. Students will be introduced to the concepts of power, sample size and effect size and will calculate necessary power and sample size requirements in the finalized grant proposal. Students will also participate in a mock grant review session. Students will use this opportunity to develop and submit an application for an NIH or foundation pre-doctoral award to support their dissertation work.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 8213. Cancer Epidemiology. 3 Credit Hours.

This course covers general principles of carcinogenesis and genetics of cancer, domestic and international patterns in cancer incidence and mortality, cancer surveillance and screening, cancer prevention and control, as well as epidemiologic characteristics and risk factors for most prevalent cancers among adults, children/young adults, and public health implications of cancer. In addition, there is a focus throughout the course on critical evaluation of different methodological approaches used in cancer research, potential biases inherent given study designs, and practical solutions.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(EPBI 5002|Minimum Grade of B-|May not be taken concurrently)
AND (EPBI 5101|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently)

EPBI 8301. Clinical Research Methods in Public Health. 3 Credit Hours.

This course provides an introduction to the core topics in clinical research. Beginning with practical issues in starting and advancing in a career in clinical investigation, the course proceeds to cover diagnosis and treatment studies, research on prognostic and casual risk factors, special types of study design and analyses, principles of measurement in human subjects, studies using secondary databases, and outcomes research. This course will be an elective class for all students enrolled in the Master of Science in Epidemiology, Clinical Research and Translational Medicine, as well as the Doctor of Philosophy in Epidemiology programs. This graduate level course is principally aimed at health care professionals, not limited to the field of public health, usually with graduate courses relevant to their clinical discipline, who desire advanced knowledge and skills in evaluating, designing and implementing clinical research studies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5002|Minimum Grade of B-|May not be taken concurrently.

EPBI 8302. Behavioral Measurement. 3 Credit Hours.

This course will cover the classical and modern test theories and their applications to solve measurement problems in practice. This course will educate students on measurement concepts including test standardization, validity, reliability, operational definitions, scaling and latent variables in social and behavioral sciences. Issues surrounding validity and reliability of measures will be discussed in detail. Students will be given an opportunity to critically evaluate existing measures and to propose how a new measure can be developed and evaluated.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 5002|Minimum Grade of B-|May not be taken concurrently
OR EPBI 8012|Minimum Grade of B-|May not be taken concurrently.

EPBI 8303. Behavioral Epidemiology. 3 Credit Hours.

This course covers behavioral epidemiology and its role in public health. Students will be able to identify and explain the appropriate methods for measuring health-related behaviors/outcomes and related psychosocial constructs; critically analyze the appropriateness of methods used within published studies on health-related behaviors as well as determine appropriate methods for behavior-related research questions. In addition, students will use a behavioral theory/model as a framework and apply their skills in the development and assessment of a behavioral intervention to address a current public health problem of their choice including, but not limited to, intervention development, implementation planning, and evaluation/analyses.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(EPBI 5101|Minimum Grade of B-|May not be taken concurrently
OR EPBI 5201|Minimum Grade of B-|May not be taken concurrently)
AND (SBS 5002|Minimum Grade of B-|May not be taken concurrently)
AND (EPBI 5002|Minimum Grade of B-|May not be taken concurrently)

EPBI 8307. Systematic Reviews. 3 Credit Hours.

Systematic reviews are essential tools for health care workers, researchers, consumers, and policymakers who need to keep abreast of the accumulation of knowledge within their field. Systematic reviews provide more objective evaluation of the evidence than has been possible with traditional narrative reviews, and so can help resolve uncertainty and point toward promising future directions in research and practice. When appropriate, meta-analyses can help increase the precision of estimates regarding treatment effects and way to improve treatments. For example, identification of subgroups of individuals most (or least) likely to benefit from treatment can generate new questions to be addressed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 8401. Concepts and Methods in Epidemiologic Research. 3 Credit Hours.

The doctoral course is designed to be the first in a series of doctoral level epidemiologic research courses and will focus on providing an in-depth conceptual framework of key research concepts and techniques. The course will enhance knowledge of research methods and encourage critical thinking to successfully develop research questions and design research studies. Students will demonstrate mastery in the fundamental skills that enable them to apply epidemiologic research methods to the design, analysis and interpretation of public health data. Specifically, the course will provide didactic and hands-on training in causality and association, study design, bias, error, confounding, causal diagrams, interaction, and effect modification. By the end of this course, students will have the foundational knowledge to begin to apply these methods to their own research. The course is intended for doctoral students in epidemiology or related fields. Students must be enrolled in a doctoral program in the College of Public Health or by permission from instructor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health.

Repeatability: This course may not be repeated for additional credits.

EPBI 8402. Intermediate Concepts and Methods in Health Research. 3 Credit Hours.

This intermediate level research methods course will solidify student competencies in modern design of population health studies and provide methodological training beyond traditional approaches. This course is designed for doctoral students who have completed EPBI 8401 or a similar graduate level research methods course (as approved by Instructor) that provided a foundation for the understanding of epidemiologic concepts in population based studies. The course will include in-depth instruction through hands-on learning and didactic training that will develop the skills needed for students to design studies that preemptively address threats to validity and data analysis plans for both traditional and novel complex study designs. In addition to focus on the core concepts of study design, students will focus on understanding advanced topics such as causal inference and bias analysis. Students will also understand commonly encountered study issues such as competing risks, confounding, error, bias, and missing data. By the end of this course, students will move beyond understanding conceptual methods learned in entry-level research methods courses and will advance to applying traditional and advanced concepts to study design and data analysis planning.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

EPBI 8401|Minimum Grade of B-|May not be taken concurrently

OR EPBI 8202|Minimum Grade of B-|May not be taken concurrently.

EPBI 8403. Applied Concepts and Methods in Health Research. 3 Credit Hours.

This laboratory-based class will focus on analytic exercises to analyze and interpret data from cross-sectional, case-control, cohort, longitudinal and nested studies. Concepts will include traditional regression modeling as well as multilevel/hierarchical modeling, bias analysis, and Bayesian statistics. Students will learn how to apply key epidemiologic concepts to the analysis of data. By the end of this course, students will have developed the practical skills needed to analyze and interpret epidemiologic data.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health.

Repeatability: This course may not be repeated for additional credits.

EPBI 9083. Readings and Conference in Public Health. 1 to 3 Credit Hour.

This is an advanced tutorial in public health with an appropriate faculty member. Note: Registration requires a written contract with the supervising faculty member and approval of the student's advisor and of the Director of Graduate Programs.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

EPBI 9187. Biostat Cnslt Practicum. 3 Credit Hours.

The objective of this course is to prepare students to collaborate effectively as biostatistics support consultants in the health professions. The emphasis will be to refresh statistical techniques and develop communication and problem solving skills. This course is designed for graduate students in public health who can use well-validated commercial statistical software, such as SAS, for the analyses of data from observational and/or interventional research studies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

EPBI 9289. MPH Fieldwork I. 3 Credit Hours.

This course entails a fieldwork project or internship in a public health agency. It includes seminars, oral and written reports of progress, and joint supervision by a preceptor and faculty member.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(EPBI 5201|Minimum Grade of B-|May not be taken concurrently)
AND (EPBI 5002|Minimum Grade of B-|May not be taken concurrently)
AND (EPBI 5005|Minimum Grade of B-|May not be taken concurrently)
AND (HPM 5006|Minimum Grade of B-|May not be taken concurrently)
AND (SBS 5001|Minimum Grade of B-|May not be taken concurrently)
AND (EPBI 8012|Minimum Grade of B-|May be taken concurrently)

EPBI 9389. MPH Fieldwork II. 3 Credit Hours.

This course is an evaluation of the fieldwork project or internship using a full range of research methodologies. Data are collected, analyzed, and reported in a comprehensive final report. Oral and/or poster presentations are presented to public health organizations. The course includes a final oral defense of the project or internship.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

EPBI 9991. Public Health Research Project. 1 to 3 Credit Hour.

Under the direction of an appropriate graduate faculty member, students tie together their coursework in a project that poses a problem, gathers data to help analyze the problem, and provides a solution. Note: Enrollment must be approved by the student's advisor and the Director of Graduate Programs.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

EPBI 9994. Preliminary Examinations. 1 Credit Hour.

This course supports preparation for taking the preliminary examinations in the Health Policy and Social and Behavioral Sciences Ph.D. programs. To enroll, students must have completed all required coursework for the Ph.D. and obtain the approval of the Ph.D. Program Director. Students must be enrolled to take the required preliminary examinations.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.

Repeatability: This course may be repeated for additional credit.

EPBI 9996. Masters Res in Pub Hlth. 3 Credit Hours.

This course is limited to students who have chosen to fulfill the master's degree by writing a thesis.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

EPBI 9998. Dissertation Proposal Research. 1 to 2 Credit Hour.

This course supports preparation of the dissertation proposal. The course is required for students who have passed the preliminary examinations for their PhD program and who have not yet defended the dissertation proposal.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.

Repeatability: This course may be repeated for additional credit.

Pre-requisites:

EPBI 9994|Minimum Grade of P|May not be taken concurrently.

EPBI 9999. Dissertation Research. 1 to 6 Credit Hour.

This course is limited to Ph.D. candidates who have completed and defended a dissertation proposal that is filed with the Graduate School by the last day to add a course in the semester. Continuous registration in 9999 fall and spring is required until the dissertation is successfully defended.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Student Attribute Restrictions: Must be enrolled in one of the following Student Attributes: Dissertation Writing Student.

Repeatability: This course may be repeated for additional credit.

Health Related Professions Courses

HRPR 5001. Current and Emerging Issues in Public Health and Health Professions. 0 Credit Hours.

This course is designed to provide students with an introduction to the five core areas of public health -- biostatistics, epidemiology, environmental health, health services administration, and social behavioral sciences -- and to demonstrate the intersection of public health with various health, health care, and human service professions. The discipline of public health is multifaceted, and these facets impact individuals and communities in different ways. Students will be expected to think critically about issues such as disease prevention, health promotion, the determinants of health, health information privacy, access to health services, and environmental issues, and to consider how those issues drive human behavior and community (local, national, and international) development. Successful graduation from the College of Public Health is contingent upon completion of 12 web-based modules from the approved compendium for this course. There are six core modules that all students must complete: Advancing Health People 2020, Social Determinants of Health, Access to Health Services, Health Information Technology, Public Health Infrastructure in the United States, and Environmental Health. The remaining six modules may be either embedded by program faculty or self-selected and self-paced by the individual student. Faculty can mandate certain modules within course content.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 5005. Introduction to Mindfulness. 3 Credit Hours.

This 3-credit course will review the history of mindfulness and then move to modern approaches and applications of mindfulness. A personalized mindfulness practice will be explored for relevance to a student's life and pursuit of clinical excellence in their chosen field. The course will focus on the neuro-biological influence of stress, the gut-brain axis, and the epigenetic nature of the human experience. It will explore issues such as conflict, approach versus withdrawing behaviors, and response to clinical scenarios with a clinical instructor (i.e. giving and accepting feedback). Students will deepen their understanding of concepts such as compassion fatigue, burnout, cognitive empathy, vulnerability, resilience, and chronic sorrow. The course serves as a springboard for future learning and deeper exploration into specific areas of mindfulness application, at a personal or population level.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 5200. Clin Pharm. 1.5 to 3 Credit Hour.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

HRPR 5999. Research Experience in Health Professions. 0 Credit Hours.

The Research Experience provides graduate students hands-on experiences in a research setting prior to undertaking independent, director, master's project, master's thesis, or dissertation research. This course allows graduate students the opportunity to learn best practices and principles of health research, including designing and carrying out a study, collecting preliminary data, field experiences, participation in research group meetings, assisting with analyses, drafting manuscripts, etc. with faculty which may lead to identifying a faculty mentor. The course will be graded as Pass or Fail. The Research Experience is a non-repeatable course. After the completion of this Research Experience, students will need to be enrolled in an independent study, directed research, master's research, master's thesis, dissertation proposal, or dissertation if they continue in an active research program.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8001. Introduction to Health Outcomes Measurement Science. 3 Credit Hours.

This course provides an introduction to health outcomes conceptual frameworks and assessment methods. Students will gain exposure to health outcome frameworks from public health, medical, and economic perspectives. This course will provide an overview of health outcome assessment tools. It will consider factors that influence the validity and meaningfulness of outcome assessments.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8002. Qualitative Methods in Health Outcomes Measurement. 3 Credit Hours.

This course focuses on the application of selected qualitative approaches used in the conceptualization and development of health outcome measures, in particular patient reported health outcome measures. This course draws from a variety of disciplines providing a foundation for the philosophical and theoretical bases of qualitative research paradigms.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8003. Quantitative Methods in Health Outcomes Measurement Science. 3 Credit Hours.

This course will cover the classical and modern test theories and their applications to solve measurement problems in practice. This course will educate students on measurement concepts including test standardization, validity, reliability, operational definitions, scaling, and latent variables in behavioral and health sciences. Issues surrounding validity and reliability of measures will be discussed in detail. Students will be given an opportunity to critically evaluate existing measures and to propose how a new measure can be developed and evaluated.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8004. Application of Health Outcomes Measurement Science. 3 Credit Hours.

This course focuses on the integration of measurement science and health outcomes with a focus on application of mixed methods to develop a health outcome measure in a project of value to the student. The course will also provide a deeper consideration of technology and electronic and mobile health application platforms for operationalization of their outcomes project. Standards and guidelines for development and qualification of measures as clinical trial endpoints through the FDA process will provide a structure for the projects. Each student will present their proposal which will be framed either as a project, FDA clinical outcomes assessment qualification package or grant proposal.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(HRPR 8001|Minimum Grade of B-|May not be taken concurrently)

AND (HRPR 8002|Minimum Grade of B-|May not be taken concurrently)

OR HRPR 8003|Minimum Grade of B-|May not be taken concurrently)

HRPR 8101. Bioethics and Ethical Decision-Making. 3 Credit Hours.

This seminar course is designed to facilitate interdisciplinary dialogue and approaches for ethical decision-making. Students from many health disciplines can engage in bioethical discourse. Students can increase their understanding of ethics within the context of research and health care, identify and consider moral and professional values and preferences when collecting information and making decisions, and recognize the importance of collaboration when making bioethical decisions. The student reflects on personal decision-making through an exploration of the results of the Myers-Briggs Type Indicator (MBTI).

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8102. Cultural Competence in Health Studies. 3 Credit Hours.

This course emphasizes culture as a defining characteristic of our diverse society and examines a multitude of its implications for culturally sensitive and competent health-care service, policy-making, and system transformation in a transdisciplinary and transcultural context. The course begins with contextualizing key concepts such as cultures, health disparities, cultural competence, cultural sensitivity, multicultural health, cross-cultural concepts of health and illness, and complementary/alternative medicine and spirituality. Communication, education/training, programming, and ethical issues central to promoting cultural competence in the healthcare system are then addressed. In addition, the course gives insights into specific cultural groups, including Hispanic, African, Asian, Native, and Caucasian American populations, as well as aging populations and individuals with unique sexual orientation. Key challenges and opportunities concerning cultural issues facing the current health fields are also examined.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8103. Health Across the Lifespan. 3 Credit Hours.

This course will provide an interdisciplinary lifespan-oriented overview of the health construct spanning from prenatal influences through to extreme longevity, with an emphasis on its inter-relationships with biological, behavioral, and social ecological influences. Particular emphasis is given to methodological, theoretical, and substantive issues needed for synthesis of an interdisciplinary mastery of development and health. By the end of the course, students gain a thorough knowledge of how to measure health of individuals, communities, and populations; an understanding of both the correlates and sequelae of health and development across the lifespan; and an ability to assess the implications of health disparities across the lifespan.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8104. Systems Theory and Change Theory. 3 Credit Hours.

The purpose of this course is to provide the theoretical foundation for all subsequent courses and formal scientific inquiry. Students in this course will use systems theory, change theory, and other integrative theories and models to explore complex health and life-quality related issues with ecological theory providing the planning framework. Students will focus on synthesis and integration of key health-related factors at the micro and macro levels that affect health for diverse individuals, families, communities, cultures, environments, societies and health systems using a lifespan and life cycle approach. They will apply principles guiding interdisciplinary approaches to complex health issues in a holistic manner.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8203. Systematic Rev Hlth Ecol. 3 Credit Hours.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8985. Teaching in Higher Education: Health Professions. 3 Credit Hours.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HRPR 8987. Teaching in Higher Education Practicum. 3 Credit Hours.

The purpose of the Teaching in Higher Education Practicum is to provide a mentored teaching experience for students who are currently teaching as the instructor (not just a grader). Building on the content discussed in the prerequisite course, the focus of this course is to apply the skills and reflect on teaching practices in real time. Through paired critiques and group discussions, students will work together to share teaching experiences and problem solve. Students are encouraged to develop strategies and approaches to teaching that can be tailored to their circumstances.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

HRPR 8985|Minimum Grade of B-|May not be taken concurrently.