

School of Public Health

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About the School of Public Health

Schools of public health were established to develop leaders and scientists who could bring academic rigor to the discipline of "assuring conditions in which people can be healthy." Once the major challenges related to sanitation and clean water, vaccine-preventable diseases, and other communicable diseases were identified (although never fully solved!), public health as an academic discipline began to examine the larger issues of where and how we live, work, and play, and the influence these have on whether families, communities, and populations can live healthy lives.

The great challenges before us now are understanding the root causes — known as social determinants of health — that shape our capacity as individuals, families, communities, and populations to become and remain healthy. The COVID-19 pandemic unmasked the effects of these social determinants of health and their role in creating health inequities. We are just beginning to grasp how these determinants impact, and are impacted by, our environment, which in turn affects gene expression and individual susceptibilities to both communicable and non-communicable diseases. Connecting this understanding to the impacts of climate change on human health is a commitment the school is making through a new school-level faculty hiring initiative.

Our school engages with local leaders in Birmingham to address homicide as a public health crisis, supports community efforts to address the decades-long environmental injustices related to environmental contamination in north Birmingham, works with communities in the Black Belt of rural Alabama to understand the disparities in the development of hypertension, and develops novel methods of stemming the HIV/AIDS epidemic in Sub-Saharan Africa. Throughout the COVID-19 pandemic, public health leaders from our school have provided expert guidance to the University of Alabama System and UAB regarding COVID-19 related policies and procedures; we have been engaged in regular consultations with the Jefferson County Health Department in Birmingham, as well as with the Alabama Department of Public Health (ADPH); and we have supported the work of ADPH through our school's Case Investigation/Contact Tracing activities, the establishment of a Regional Center for Infection Prevention and Control, and our management of COVID-19 testing in K-12 schools across the state.

Opportunities abound for students to explore connections between public health and other academic disciplines across the UAB campus. We offer practical and meaningful internship experiences through partnerships with state and local governmental agencies, local businesses and industry, and a global network of governmental and non-governmental organizations. Students have been at the forefront of our COVID-19 activities, most notably becoming Contact Tracers — simultaneously learning public health and DOING public health! Students in the UAB School of Public Health have life-changing opportunities to BE SOMEBODY and MAKE A DIFFERENCE! Come join us!

Admission Requirements

Our graduate programs in Biostatistics, Environmental Health Sciences, Epidemiology, Health Behavior, and Health Policy and Organization offer students intellectual tools to address complex problems with a global perspective. Whether you are looking for a highly rated program that provides the opportunity to work next to leading researchers or you are a graduate student looking for information related to your studies, we have everything you need. Click the applicable link below for information related to your particular need.

If you are applying to a stand-alone MPH, MSPH, or DrPH program, you will submit your primary application via sophas.org. All students admitted through SOPHAS must also complete a supplemental application, and pay the application fee, to the UAB Graduate School. If admitted, you will then complete a supplemental application to the UAB Graduate School. Instructions will be provided upon admission. The cost for a **SOPHAS application** is \$150 for the first school or program to which you apply. Any additional schools or programs to which you choose to apply will cost \$60 per designation, even if you submit those schools or programs later in the application cycle.

If you are applying to any of our coordinated degree programs, Certificates, the MS in Biostatistics, an accelerated Master's program (offered to current UAB undergraduate students only), or the PhD programs, submit your application via the UAB Graduate School. The UAB Graduate School's standard fee is \$50 for domestic applicants and \$60 for international applicants.

See our [website](#) for further information on program availability, where to apply, and when to apply.

Still have questions? Send an email to soph@uab.edu or contact us by phone at (205) 934-4993.

Accelerated Learning Opportunities

Public Health offers both **Fast-Track and Accelerated Bachelor's/Masters (ABM)** options for high-achieving undergraduate students.

The **Fast Track Master of Public Health Program** allows motivated undergraduate students to begin coursework for a Master of Public Health (MPH) degree while still completing their undergraduate degree requirements. We welcome students from any major to consider the Fast Track MPH program and will provide academic advising to assist students in planning their graduate coursework, which students can begin once they have completed 60 undergraduate credit hours (including 36 at UAB).

Eligibility

UAB students in any major are eligible to apply for this program; there are no course prerequisites for admission. The GRE is not required for admission to our MPH program.

To be considered for the Fast Track Program, students must have:

- Completed between 60 and 90 hours of undergraduate coursework.
- A minimum institutional GPA of 3.25.
- An application completed through the UAB Graduate School website (SOPHAS application is not required for Fast Track applicants).
- An official copy of the current UAB undergraduate transcript.

- Two letters of recommendation: one from a current academic advisor and one from current or previous college course instructor. Electronic submission is preferred; however, referees can mail a letter in a sealed envelope directly to the UAB Graduate School.
- A career statement describing interests and goals in Public Health.
- A one-page CV/resume of academic activities including awards and community service.

The **Accelerated Bachelor's to Master of Public Health Program** allows motivated undergraduate students to begin coursework for a Master of Public Health (MPH) degree while still completing their undergraduate degree requirements. We welcome students from any major to consider the ABM program and will provide academic advising to assist students in planning their graduate coursework, which students can begin once they have completed 60 undergraduate credit hours (including 36 at UAB). As a major benefit of this program, up to 12 hours of graduate credit can be counted toward (shared) with the undergraduate degree, saving students time and money.

Eligibility

UAB students in any major are eligible to apply for this program; there are no course prerequisites for admission. The GRE is not required for admission to our MPH program.

To be considered for the ABM#Program, students must have:

- Completed between 60 and 90 hours of undergraduate coursework.
- A minimum institutional GPA of 3.5.
- An application completed through the UAB Graduate School website (SOPHAS application is not required for ABM applicants).
- An official copy of the current UAB undergraduate transcript.
- One letter of recommendation from a current or previous UAB course instructor. Electronic submission is preferred; however, referees can mail a letter in a sealed envelope directly to the UAB Graduate School.
- A career statement describing interests and goals in Public Health.
- A one-page CV/resume of academic activities including awards and community service.

Maintaining Status in ABM

To maintain status in ABM, the student must:

- maintain a 3.25 GPA average in undergraduate courses
- receive a B (or better) in the MPH courses taken while still an undergraduate student
- maintain full-time student status at UAB

Early Acceptance

Early Acceptance Programs are designed for academically superior high-school students. They allow high-achieving students to be conditionally admitted into a graduate program at the same time they are admitted to an undergraduate program. Students who were admitted to the **Early Acceptance Program** may enroll in the MPH program when eligible provided they maintain a 3.5 UAB undergraduate GPA.

Additional Information

Deadlines for All Applications (Both www.uab.edu/soph/home/apply US and International)	
	Fall Term (Domestic): July 1; (International): April 1; final deadlines vary by department
	Spring Term (Domestic only): November 1 (except for Biostatistics, which only admits in the Fall)
	Summer Term (Domestic only): April 1 (except for Biostatistics, which only admits in the Fall).
	Doctoral Programs: Deadlines vary by department
Entrance Test:	www.uab.edu/soph/home/apply (GRE recommended but not required for admission to MPH programs)
International Transcripts:	International transcripts must be submitted to World Education Services (WES) or Educational Credential Evaluators (ECE) for an official course-by-course credential evaluation (document-by-document evaluations will not suffice).
Number of Evaluation Forms Required:	Three letters of recommendation from academic or professional references.
Apply Webpage:	www.uab.edu/soph/home/apply

DEGREES OFFERED

Master of Public Health (MPH)

Prospective students should click here to obtain specific admission requirements on how to apply.	
Environmental Health Concentrations:	Environmental Health (also online)
	Fast Track Environmental Health
	Accelerated Bachelor's / Masters (ABM) Environmental Health
Epidemiology Concentrations:	Epidemiology (also online)
	Fast Track Epidemiology
	Accelerated Bachelor's / Masters (ABM) Epidemiology
Health Behavior Concentrations:	Health Behavior (also online)
	Fast Track Health Behavior
	Accelerated Bachelor's / Masters (ABM) Health Behavior
Health Policy and Organization Concentrations:	Health Policy and Organization (also online)
	Fast Track Health Policy and Organization

	Accelerated Bachelor's / Masters (ABM) Health Policy and Organization
	Maternal & Child Health Policy & Leadership (also online)
	Accelerated Bachelor's / Masters (ABM) Maternal & Child Health Policy & Leadership
Public Health General Degree:	Population Health - individualized degree (also online)
	Fast Track Population Health
	Accelerated Bachelor's / Masters (ABM) Population Health
Public Health Coordinated Degree Programs:	MPH / Doctor of Medicine
	MPH / Doctor of Optometry
	MPH / Doctor of Pharmacy
	MPH / Doctor of Philosophy in Civil Engineering
	MPH / Doctor of Veterinary Medicine (Auburn)
	MPH / Master of Business Administration
	MPH / Master of Science in Civil Engineering
	MPH / MS in Nutrition Sciences, Dietetic Internship/Clinical Track
	MPH / Juris Doctorate (Samford)
	MPH / Master of Public Administration
	MPH / Master of Social Work (UA)
	MPH / Master of Science in Physician Assistant Studies
	MPH / Master of Science in Health Administration

Master of Science in Public Health (MSPH)

Prospective students should [click here](#) to obtain specific admission requirements on how to apply.

Biostatistics Concentration:	Biostatistics
Environmental Health Concentrations:	Environmental and Occupational Health Sciences
	Industrial Hygiene
Epidemiology Concentration:	Applied Epidemiology
Health Policy and Organization Concentration:	Outcomes Research Online
Public Health MSPH Coordinated Program:	MSPH / Doctor of Medicine

Master of Science (MS)

Prospective students should [click here](#) to obtain specific admission requirements on how to apply.

Biostatistics Concentration:	Biostatistics
Health Policy & Organization Concentration:	Global Health

Doctor of Philosophy (PhD)

Prospective students should [click here](#) to obtain specific admission requirements on how to apply.

Biostatistics Concentration:	Biostatistics
Environmental Health Sciences Concentration:	Environmental Health Sciences
Epidemiology Concentration:	Epidemiology
Health Behavior Concentration:	Health Behavior

Doctor of Public Health (DrPH)

Prospective students should [click here](#) to obtain specific admission requirements on how to apply.

Health Policy and Organization Concentrations:	Health Policy and Organization
	Maternal & Child Health Policy
	Outcomes Research
	Preparedness Leadership
Biostatistics Concentration:	Biostatistics

For detailed information about the graduate programs offered, please consult the [School of Public Health website](#) or visit the UAB School of Public Health:

Ryals Public Health Building
Room 130, Office of Student and Academic Services
1665 University Boulevard
Birmingham, AL 35294-0022
Telephone: (205) 934-4993
E-mail: soph@uab.edu
Website: www.uab.edu/soph
Facebook: www.facebook.com/UABSchoolofPublicHealth

BST-Biostatistics Courses

BST 601. Biostatistics. 4 Hours.

Logic and language of scientific methods in life science research; use of basic statistics in testing hypotheses and setting confidence limits. Simple and multiple regression and elementary experimental designs. BST 601 is a 4-credit course for MPH students. There are no formal prerequisites for this course; however, familiarity and comfort with basic mathematical concepts is essential. The minimum technical skills required include the ability to use Adobe Acrobat, Word, Excel, and PowerPoint. If you are deficient in any of these areas, it is your responsibility to improve your skills before starting the course.

BST 603. Introductory Biostatistics for Graduate Biomedical Sciences. 3 Hours.

This course will utilize current statistical techniques to assess and analyze health science related data.

BST 611. Intermediate Statistical Analysis I. 3 Hours.

Students will gain a thorough understanding of basic analysis methods, elementary concepts, statistical models and applications of probability, commonly used sampling distributions, parametric and non-parametric one and two sample tests, confidence intervals, applications of analysis of two-way contingency table data, simple linear regression, and simple analysis of variance. Students are taught to conduct the relevant analysis using current software such as the Statistical Analysis System (SAS).

BST 612. Intermediate Statistical Analysis II. 3 Hours.

This course will introduce students to the basic principles of tools of simple and multiple regression. A major goal is to establish a firm foundation in the discipline upon which the applications of statistical and epidemiologic inference will be built. If prerequisite is not met, permission of instructor is required.

Prerequisites: BST 611 [Min Grade: C]

BST 613. Intermediate Statistical Analysis III. 3 Hours.

This course will introduce students to additional general concepts in biostatistics beyond an introductory level to include study design, power and sample size estimation, mixed-models, survival analysis, survey design and interpretation of research results. We recommend a prior statistics/biostatistics course that included hypothesis testing for proportions and means, ANOVA, correlation, simple and multiple linear regression, and logistic regression (with approval of the instructor).

Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C]

BST 619. Data Collection and Management. 3 Hours.

Basic concepts of study design, forms design, quality control, data entry, data management and data analysis. Hands-on experience with data entry systems, e.g., DBASE, and data analysis software, e.g., PC-SAS. Exposure to other software packages as time permits. Previous computer experience or workshop on microcomputers highly recommended. NOTE: If space permits, non-degree graduate students will be permitted to enroll. All students registered for the course must attend 1st class to remain enrolled. Previous computer experience or workshop on microcomputers highly recommended.

Prerequisites: BST 611 [Min Grade: C] or BST 621 [Min Grade: C]

BST 620. Applied Matrix Analysis. 3 Hours.

Vector and matrix definitions and fundamental concepts; matrix factorization and application. Eigen-values and eigen-vectors, functions of matrices, singular and ill-conditioned problems.

Prerequisites: BST 622 [Min Grade: C]

BST 621. Statistical Methods I. 3 Hours.

Mathematically rigorous coverage of applications of statistical techniques designed for Biostatistics majors and others with sufficient mathematical background. Statistical models and applications of probability; commonly used sampling distributions; parametric and nonparametric one and two sample tests and confidence intervals; analysis of two-way contingency table data; simple linear regression; simple analysis of variance designs with equal or proportional subclass members; use of contrasts and multiple comparisons procedures; introduction to survival analysis; multivariate methods. Interested students must have a year of calculus sequence before enrolling in BST 621.

BST 622. Statistical Methods II. 3 Hours.

Mathematically rigorous coverage of applications of statistical techniques designed for Biostatistics majors and others with sufficient mathematical background. Statistical models and applications of probability; commonly used sampling distributions; parametric and nonparametric one and two sample tests and confidence intervals; analysis of contingency tables; simple linear regression; simple analysis of variance designs with equal or proportional subclass members; use of contrasts and multiple comparisons procedures; introduction to survival analysis; multivariate methods.

Prerequisites: BST 621 [Min Grade: B](Can be taken Concurrently)

BST 623. General Linear Models. 3 Hours.

Simple and multiple regression using matrix approach; weighted and non-linear regression; variable selection methods; modeling techniques; regression diagnostics and model validation; systems of linear equations; factorial designs; blocking; an introduction to repeated measures designs; Coding schemes.

Prerequisites: BST 622 [Min Grade: B]

BST 624. Experimental Design. 3 Hours.

BST 624 provides intermediate level training for the design of experiments in biomedical research. It will cover classical experimental designs including factorial and nested (hierarchical) designs, Latin squares, incomplete block designs, and fractional factorials. It will use a matrix approach to analysis. In addition, it will emphasize statistical methodology and communication of procedures, results, and conclusions. Students are expected to have prior coursework in calculus and matrix algebra. Additional prerequisites include successful completion (B or higher) in either the BST 621/622 sequence or the BST 611/612 sequence.

Prerequisites: (BST 621 [Min Grade: B] and BST 622 [Min Grade: B]) or (BST 611 [Min Grade: B] and BST 612 [Min Grade: B])

BST 625. Design/Conduct Clinical Trials. 3 Hours.

Concepts of clinical trials; purpose, design, implementation and evaluation. Examples and controversies presented.

Prerequisites: (BST 611 [Min Grade: B] and BST 612 [Min Grade: B]) or (BST 611Q [Min Grade: B] and BST 612Q [Min Grade: B]) or (BST 621 [Min Grade: B] and BST 622 [Min Grade: B])

BST 626. Data Management and Reporting with SAS. 3 Hours.

This course is designed to provide an introduction to data management and reporting using the SAS system.

BST 630. Estimation & Inference. 3 Hours.

This course is an introduction to probability concepts and statistical inference. Topics include counting techniques, discrete and continuous univariate and multivariate random variables & common distributions, probability, expectation, variance, confidence intervals, the Central Limit Theorem, and hypothesis testing. Restricted to MSPH and DrPH students. Preq: Calculus II.

BST 631. Statistical Theory I. 4 Hours.

Fundamentals of probability; independence; distribution and density functions; random variables; moments and moment generating functions; discrete and continuous distributions; exponential families, marginal and conditional distributions; transformation and change of variables; convergence concepts, sampling distributions. Point and interval estimation; hypothesis and significance testing; sufficiency and completeness; ancillary statistics; maximum likelihood and moment estimators; asymptotic properties of estimators and tests; introduction to Bayesian inference. Prerequisites: Proficiency in Algebra and calculus is required.

BST 632. Statistical Theory II. 4 Hours.

Fundamentals of probability; independence; distribution and density functions; random variables; moments and moment generating functions; discrete and continuous distributions; exponential families, marginal and conditional distributions; transformation and change of variables; convergence concepts, sampling distributions. Point interval estimation; hypothesis and significance testing; sufficiency and completeness; ancillary statistics; maximum likelihood and moment estimators; asymptotic properties of estimators and tests; introduction to Bayesian inference.

Prerequisites: BST 631 [Min Grade: B]

BST 640. Nonparametric Methods. 3 Hours.

Properties of statistical tests; order statistics and theory of extremes; median tests; goodness of fit; tests based on ranks; location and scale parameter estimation; confidence intervals; association analysis; power and efficiency.

Prerequisites: BST 621 [Min Grade: C] and BST 631 [Min Grade: C]

BST 655. Categorical Data Analysis. 3 Hours.

Intermediate level course with emphasis on understanding the discrete probability distributions and the correct application of methods to analyze data generated by discrete probability distributions. The course covers contingency tables, Mantel-Haenszel test, measures of association and of agreement, logistic regression models; regression diagnostics; proportional odds; ordinal and polytomous logistic regression; Poisson regression; log linear models; analysis of matched pairs; and repeated categorical data.

Prerequisites: BST 621 [Min Grade: B] and BST 622 [Min Grade: B]

BST 660. Applied Multivariate Analysis. 3 Hours.

Analysis and interpretation of multivariate general linear models including multivariate regression, multivariate analysis of variance/covariance, discriminant analysis, multivariate analysis of repeated measures, canonical correlation, and longitudinal data analysis for general and generalized linear models. Extensive use of SAS, SPSS, and other statistical software.

Prerequisites: BST 623 [Min Grade: B]

BST 661. Structural Equation Modelling. 3 Hours.

Basic principles of measurements; factor analysis and latent variable models; multivariate predictive models including mediation mechanisms and moderators effects; path analysis; intergrative mutivariate covariance models, methods of llongitudinal analysis.

Prerequisites: BST 623 [Min Grade: C]

BST 665. Survival Analysis. 3 Hours.

Kaplan-Meier estimation; Parametric survival models; Cox proportional hazards regression models; sample size calculation for survival models; competing risks models; multiple events models.

Prerequisites: BST 622 [Min Grade: B](Can be taken Concurrently)

BST 670. Sampling Methods. 3 Hours.

Simple random, stratified, cluster, ratio regression and systematic sampling; sampling with equal or unequal probabilities of selection; optimization; properties of estimators; non-sampling errors; sampling schemes used in population research; methods of implementation and analyses associated with various schemes.

Prerequisites: BST 631 [Min Grade: C]

BST 671. Meta-Analysis. 3 Hours.

Statistical methods and inference through meta analysis.

Prerequisites: BST 622 [Min Grade: C] and BST 632 [Min Grade: C]

BST 675. Introduction to Statistical Genetics. 3 Hours.

This class will introduce students to population genetics, genetic epidemiology, microarray and proteomics analysis, Mendelian laws, inheritance, heritability, test cross linkage analysis, QTL analysis, human linkage and human association methods for discrete and quatitative traits.

Prerequisites: BST 611 [Min Grade: C] or BST 621 [Min Grade: C]

BST 676. Genomic Data Analysis. 3 Hours.

The purpose of this class is to teach graduate students practical skills and statistics concepts and methods that underlie the analysis of high-dimensional genomic big data generated by high throughput technologies, as well as issues in the experimental design and implementation of these technologies. Lectures contents will be delivered often with live demonstrations. Afterwards, students will be immersed by practical problem solving sessions. The R language will be used for programming throughout the course.

Prerequisites: BST 611 [Min Grade: B] or BST 621 [Min Grade: B]

BST 680. Statistical Computing with R. 3 Hours.

This course is mainly focused on R and how to use R to conduct basic statistical computing. The course contains three themes: R programming, introduction to high performance computing, and basics of statistical computing.

Prerequisites: BST 621 [Min Grade: C] and BST 622 [Min Grade: C] and BST 626 [Min Grade: C]

BST 685. Training in Biostatistics Teaching. 3 Hours.

Acquire skills for teaching in higher education, including syllabus design, communication skills for the classroom and office hours, creating assignments and rubrics, preparing and giving lectures, preparing nondidactic content, and effective grading. **Prerequisites:** Must have completed the course that you will be the TA, or similar course, in a prior semester with a grade of B or higher. Completed the Biostatistics Qualifying Exam at the applicable level, have an overall GPA of 3.0 or higher (be a student in good standing with the UAB Graduate School). Receive an invitation from the applicable faculty member to register for this course.

BST 690. Biostatistical Consulting and Applied Problems. 3 Hours.

Students will work individually to address, analyze and present the results of an applied problem or grant design each week. The presentation of approaches, solutions and designs will be conducted in a round table format. Students will be evaluated on the quality of solution and by their presentation and class participation.

Prerequisites: BST 621 [Min Grade: C] and BST 622 [Min Grade: C]

BST 691. Pre-Doctoral Seminar Series. 1 Hour.

Biostatistics Seminar Series. This course is restricted to Biostatistics in Public Health majors only. This course provides an opportunity for students to learn about ongoing research in the field of biostatistics, clinical trials, and statistical genetics.

BST 695. Special Topics. 1-3 Hour.

Special topics in Biostatistics not covered in regular 600 level courses, but suited for Masters students in Biostatistics and doctoral students in other related disciplines.

BST 697. Internship in Biostatistics. 3 Hours.

The internship provides an opportunity for each student to work in a public health setting in a position that carries responsibility and is of particular interest. BST 697 is a 3-credit hour course requirement of all MPH-seeking students. In order to register for the internship course, students must have completed all public health core coursework. Usually, this means that students must wait until their 3rd semester to complete the internship. Students must complete a minimum of 180 contact hours with the organization during the semester in which they register for the internship.

Prerequisites: (BST 601 [Min Grade: C] or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C] or BST 611Q [Min Grade: C]) and (BST 612 [Min Grade: C] or BST 612Q [Min Grade: C]) and (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or ENH 611 [Min Grade: C] or ENH 611Q [Min Grade: C]) and (EPI 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610Q [Min Grade: C] or EPI 610 [Min Grade: C]) and (HB 600 [Min Grade: C] or HB 600Q [Min Grade: C]) and (HCO 600 [Min Grade: C] or HCO 600Q [Min Grade: C])

BST 698. Non Thesis Research. 1-12 Hour.

Independent non-thesis research with guidance of appropriate faculty. Restricted to Biostatistics Majors only or permission of instructor / department.

BST 703. Methods in Evidence-Based Public Health. 3 Hours.

This course introduces students to the Evidence-Based Public Health (EBPH) framework. The Evidence-Based Public Health framework will be used to collaborate with the Jefferson County Department of Health (JCDH) on; 1) identifying critical public health needs in our local area; 2) suggesting appropriate evidence-based policies and interventions to address these needs; 3) proposing an evaluation plan to assess the impact of the suggested policy or intervention.

BST 723. Theory of Linear Models. 3 Hours.

Multivariate normal distributions and quadratic forms; least square estimation; nested models; weighted least squares, testing contrasts; multiple comparison; polynomial regression; maximum likelihood theory of log linear models will be studied.

Prerequisites: BST 632 [Min Grade: B]

BST 724. Experimental Design. 3 Hours.

This course provides training for the design of experiments in biomedical research. BST 724 extends the intermediate training to delve into more theoretical justification and advanced applications. The course will cover classical experimental designs including factorial and nested (hierarchical) designs, Latin squares, incomplete block designs, fractional factorials, and mixture designs. It will use a matrix approach to analysis. In addition, it will emphasize statistical methodology and communication of procedures, results, and conclusions. BST 724 is intended for advanced graduate students in the Department of Biostatistics who have completed BST 621/622, 623, and 631/632.

Prerequisites: BST 621 [Min Grade: B] and BST 622 [Min Grade: B] and BST 623 [Min Grade: B] and BST 631 [Min Grade: B] and BST 632 [Min Grade: B]

BST 725. Advances Clinical Trials. 3 Hours.

This course will provide students with the tools to develop a basic understanding of the fundamental statistical principles involved in the design and conduct of clinical trials.

Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C] or BST 621 [Min Grade: C] and BST 622 [Min Grade: C] and BST 625 [Min Grade: C]

BST 726. Advanced Clinical Trials II. 1 Hour.

This course builds on the knowledge gained in BST 725 in order to develop a more thorough understanding of the basic methodology behind important statistical concepts used in the design and analysis of large, randomized clinical trials. The class will involve discussions of publications dealing with current topics of interest in clinical trials.

Prerequisites: BST 621 [Min Grade: C] and BST 622 [Min Grade: C] and BST 625 [Min Grade: C] and BST 631 [Min Grade: C] and BST 632 [Min Grade: C] and BST 725 [Min Grade: C]

BST 735. Advanced Inference. 4 Hours.

Stochastic convergence and fundamental inequalities; weak convergence and the central limit theorems; large sample behavior of the empirical distribution and order statistics; asymptotic behavior of estimators and tests with particular attention to LR, score and Wald tests.

Prerequisites: BST 631 [Min Grade: B] and BST 632 [Min Grade: B]

BST 740. Bayesian Analysis. 3 Hours.

To introduce the student to the basic principles and tools of Bayesian Statistics and most importantly to Bayesian data analysis techniques. A major goal is to establish a firm foundation in the discipline upon which the applications of statistical and epidemiologic inference will be built.

Prerequisites: BST 632 [Min Grade: C]

BST 741. Advanced Bayesian Analysis II. 3 Hours.

This course is intended to illustrate advanced Bayesian modeling and computation for variety of models and problems.

Prerequisites: BST 631 [Min Grade: B] and BST 632 [Min Grade: B]

BST 750. Stochastic Modeling. 3 Hours.

Poisson processes; random walks; simple diffusion and branching processes; recurrent events; Markov chains in discrete and continuous time; birth and death process; queuing systems; applications to survival and other biomedical models will be studied.

Prerequisites: BST 632 [Min Grade: C]

BST 760. Generalized Linear and Mixed Models. 3 Hours.

Generalized linear models; mixed models; and generalized estimating equations.

Prerequisites: BST 723 [Min Grade: B]

BST 765. Advanced Computational Methods. 3 Hours.

Numerical algorithms useful in biostatistics including likelihood maximization using the Newton-Raphson method, EM algorithm, numerical integration using quadratic and Monte-Carlo methods, interpolation using splines, random variate generation methods, data augmentation algorithm, and MCMC and Metropolis-Hastings algorithm; randomization tests; resampling plans including bootstrap and jackknife will be studied.

Prerequisites: BST 632 [Min Grade: B]

BST 775. Statistical Methods for Genetic Analysis I. 3 Hours.

This course will provide a statistical basis for describing variation in qualitative (disease) and quantitative traits. This will include decomposition of trait variation into components representing genes, environment and gene-environment interaction. Resemblance between relative and heritability will be described. Important topics of discussion will include oligogenic and polygenic traits, complex segregations analysis, methods of mapping and characterizing simple and complex trait loci. NOTE: It is assumed that students are comfortable with regression theory, covariance, correlation, and likelihood theory. Interested students are urged to contact the instructors with concerns regarding assumed knowledge.

Prerequisites: BST 623 [Min Grade: C] and BST 632 [Min Grade: C] and BST 675 [Min Grade: C]

BST 776. Statistical Methods for Genetic Analysis II. 3 Hours.

This course builds on the knowledge gained in BST 775 with rigorous mathematical & statistical treatment of methods for localizing genes and environmental effects involved in the etiology of complex traits using case-control and pedigree data. NOTE: Knowledge of SAS and programming languages such as C++, and basic knowledge of multivariate methods and Markov chain theory is highly recommended.

Prerequisites: BST 775 [Min Grade: C]

BST 790. DrPH Applied Practice Experience. 3-6 Hours.

All DrPH students will complete an applied practice experience (Practicum) in which the student will complete at least one project that is meaningful for a public health organization and to advanced public health practice.

BST 793. Post-doc Seminar Series. 3 Hours.

BST seminar series. Permission of instructor / department required.

BST 795. Advanced Special Topics. 1-6 Hour.

This course is designed to cover advanced special topics in Biostatistics that are not covered in regular 700 level courses, but suited for doctoral students in Biostatistics.

Prerequisites: BST 622 [Min Grade: B] and BST 632 [Min Grade: B]

BST 798. Non-Dissertation Research. 1-12 Hour.

Non-dissertation research with the guidance of appropriate faculty. Research conducted before admission to candidacy for the doctoral degree. Biostatistics majors only or permission of instructor / department required.

BST 799. Dissertation Research. 1-12 Hour.

Doctoral Level Dissertation Research under the direction of the dissertation research committee. Reserved for Biostatistics only or permission of instructor / department. Admission to Candidacy required.

Prerequisites: GAC Z

ENH-Environmental Health Sci Courses**ENH 600. Fundamentals of Environmental Health Science. 3 Hours.**

We live inextricably with our surroundings, including both the natural and built environments. And in these surroundings both natural and man-made components can impact how we live because they impact our health and our safety. This course will critically examine major factors found around us in our everyday lives and investigate how human health is impacted. Regulatory controls, risk, and preparedness will be discussed with respect to decreasing the negative environmental impacts on public health. **Prerequisite:** Admission into an MPH program, School of Public Health or special permission from the course director.

ENH 604. Introduction to GIS in Public Health. 3 Hours.

This course is designed to examine human-environment interactions and their influence on public health in today's data-driven health care systems. Spatial data and information from spatiotemporal data can advance our knowledge on answering the where, when, and why questions related to various health outcomes. We will utilize a Geographical Information System (GIS) to visualize, analyze, manage, and present our data in this course. By implementing GIS tools and methods, healthcare providers, public health practitioners, and government agencies can gain a detailed perspective on large-scale and trending health issues such as the COVID-19 pandemic and climate change. Topics will be taught in the context of public health, with lectures and examples focused on determinants of health, health care access, infectious disease epidemiology, climate-related health impacts, environmental exposures, and more. The course will be supplemented with public health-related journal articles to integrate the topics discussed with real-world applications.

ENH 605. Remote Sensing and Public Health. 3 Hours.

Observing global patterns via satellites can help with research endeavors, this course will focus on the applications of remote sensing to both health and the social sciences. Hands on experience using satellite remote sensing will enrich the experience. This course will give students the chance to learn about a wide range of remote sensing applications in both classrooms and lab settings. The course will progress from basic remote sensing analysis techniques to the point where the students are responsible for their own research projects.

ENH 607. Fundamentals of Climate Change and Health. 3 Hours.

This course explores the intersection of climate change and public health, focusing on the scientific basis of climate change and its profound impacts on human health. It examines both acute and chronic health effects resulting from climate change, discusses strategies for mitigation and adaptation, and evaluates policies aimed at addressing these challenges. Marginalized and at-risk communities will be a primary focus of attention.

ENH 609. Climate, Water Resources, and Public Health. 3 Hours.

This course explores the intricate relationships between climate, water resources, and public health. Students will examine the scientific evidence of natural and anthropogenic climate change, its impact on water resources, and the subsequent effects on public health. The course will also cover mitigation and adaptation strategies, policies, and case studies from various regions.

ENH 610. Environmental Disasters. 3 Hours.

Examines the worldwide problem of toxic disasters, particularly those involving invisible agents (chemicals, infectious disease agents, radiation). Theory, case studies, field experience, and current scientific research are reviewed, and the public health, environmental, human services and public policy implications of toxic disasters are discussed.

ENH 611. Environmental & Occupational Exposure Assessment. 3 Hours.

This course is intended to develop an understanding and appreciation of environmental exposure assessment and its role in providing the tools and information for toxicology, epidemiology, and risk management. The course material introduces the general concepts of first recognizing environmental exposures to chemicals in human populations, and then using sampling techniques to assess exposures. This is a designated service learning course.

ENH 612. Assessing & Managing Environmental Risks. 3 Hours.

The purpose of this course is to provide students with an overview of environmental policy, with a focus on demonstrating how toxicology and exposure measurements are used in environmental risk assessment and management. Students are presented with the basic elements of a quantitative risk assessment including hazard identification, exposure assessment, dose-response assessment, and risk characterization. This course is designed to instill critical thinking regarding the often conflicting economic, social, and environmental tradeoffs inherent in environmental policy and management.

Prerequisites: ENH 650 [Min Grade: C] (Can be taken Concurrently) or ENH 650Q [Min Grade: C]

ENH 615. Environmental Justice and Ethics. 3 Hours.

This course will critically examine one of the fastest growing social movements in the United States, the movement for environmental justice, and will explore the relationships among environmentalism and ethics. We will discuss the ethical considerations underlying the placement of hazardous waste sites and toxic industries in poor communities and communities of color, as well as the economic and social issues that resulted from these actions. The course will also focus on Native American communities in the west, colonialism and global justice/human rights.

ENH 617. Sustainability and Public Health. 3 Hours.

Starting from a foundation of sustainability framed by the UN sustainable development goals, this course examines place-based examples of successes and challenges in sustainability and public health. Students will critically evaluate the intersecting factors contributing to and scientific/policy evidence underpinning socially, environmentally, and economically unsustainable elements of our local community, and how these situations impact human health and well-being. Particular areas of emphasis include the built environment, transportation, waste, food, supply chain, energy, and climate change. Course presentation will include lectures, readings, field experiences, community engagement, and videos/film.

ENH 621. Fundamentals of Industrial Hygiene. 3 Hours.

Chemical, physical and other hazards and stresses found in the work environment. Recognizing potential hazards by understanding industrial processes, toxicity of environmental contaminants and occupational disease processes. Study design and preparation for field evaluation, conduct of industrial hygiene surveys, and interpretation of survey results.

ENH 624. Control of Occupational Hazards. 2 Hours.

Importance of engineering controls in reducing occupational health hazards. Substitution of less toxic substances, modification of work processes, and design of local exhaust ventilation systems; proper selections and use of personal protective equipment, especially respirators, also considered.

ENH 625. Industrial Hygiene Case Studies. 2 Hours.

Integrates students' basic knowledge through consideration of real work-place situations. Step-by-Step analysis of case reports covering occupational health problems in representative industrial situations. Sequential presentation of overview of working conditions, survey strategies, interpretation of results, and recommendations.

ENH 626. Physical Agents. 2 Hours.

Sources, effects, and control of occupational and environmental noise, ionizing and non-ionizing radiation, and temperature extremes. Review of exposure standards and introduction of measurement equipment and techniques.

ENH 635. Foodborne and Waterborne Diseases: Causes and Prevention. 3 Hours.

This course provides a broad overview of the major foodborne and waterborne diseases. The course describes how information from surveillance is used to improve public health policy and practice in ways that contribute to the safety of our food and water. We focus on the pathogens responsible for food- and water-transmitted diseases, discussing the diseases they cause, their prevalence and relevance to public health in developed and developing nations; disease pathogenesis and clinical manifestations; reservoirs, modes of transmission, and strategies for detection and prevention.

ENH 650. Essentials of Environmental and Occupational Toxicology and Diseases. 3 Hours.

Serves as introductory graduate level course that focuses on multiple aspects of toxicology and disease processes associated with environmental and occupational exposures. Students learn basic terminology and concepts of environmental and occupational toxicology as well as occupational and environmental disease recognition, management and prevention. Emphasis is on scientific foundations rather than on addressing topical issues. The general course orientation is towards basic principles, organ system physiology, diseases and prevention. This is a designated service learning course.

Prerequisites: ENH 600 [Min Grade: C]

ENH 660. Fundamentals of Air and Water Pollution. 3 Hours.

The course is an integrated introduction to air and water pollution, including its sources, transport and effects. The course focuses on the measurement and characterization of air pollutants and the assessment of water quality. Emphasis will also be given to the regulatory control of pollutants and to the technical aspects of engineering controls. The potential impact of air pollutants on the climate change will also be emphasized.

ENH 661L. Environmental Sampling and Analysis Laboratory. 3 Hours.

This course is designed to provide the students with a thorough understanding of the principles and practice of air and water sampling and familiarize them with the analytical methods used for air and water pollutant analysis. The course will focus on contaminant gases, vapors, suspended particulate material and dissolved chemicals in water. A basic understanding of chemistry and physics is a prerequisite.

ENH 670. Fundamentals of Occupational Safety. 3 Hours.

Basic principles of safety and loss control; emphasis on prevention of losses of people, property, and products in the work place. Developing competence in human-factors engineering, fire prevention, physical and behavioral science, product safety, and science of accident prevention.

ENH 680. Interdisciplinary Field Studies. 1 Hour.

In this course, students will be organized into interdisciplinary teams to include at least one representative of each occupational safety and health academic discipline and participate in team building activities to facilitate group interactions for the interdisciplinary course ENH 681 in the spring. Students will be exposed to basic concepts of occupational hygiene, learn to recognize different types of hazards (i.e. chemical, biological, physical agents) in the workplace and their health outcomes, conduct a walkthrough survey of an occupational setting, attend OHS seminars and meetings, work collaboratively with other OHS students and professionals on projects, and learn how collaborations with other health professionals with complementary skills can help them achieve a comprehensive occupational health and safety goal. Students enrolled in this course must be admitted to one of the academic programs of the Deep South Education and Research Center. This class is a requirement for all NIOSH trainees.

ENH 681. Interdisciplinary Worksite Evaluations. 2 Hours.

To assist students in developing critical thinking and analytical skills, provide them with experience in applying discipline-specific knowledge in a broad occupational health and safety context, and provide experience in working in interdisciplinary teams. The course consists of an overview of survey methodology and information sources, with emphasis on job safety analysis, a review of the occupational site or process to be evaluated and a report of the identified hazards and recommended controls.

Prerequisites: ENH 680 [Min Grade: C](Can be taken Concurrently) or ENH 680Q [Min Grade: C]

ENH 689. Environmental Health Sciences Integrative Learning Experience. 2 Hours.

The ENH ILE or capstone course represents a culminating experience that allows students to demonstrate synthesis of foundational and concentration competencies. This course will provide students with the opportunity to use skills gained during your MPH program to assess different aspects of a community's assets, environment, or health. This course will offer insights on current research and practice, how policies influence health and allow students to identify root causes of public health issues. All MPH students must complete this capstone course to graduate during the final term of enrollment.

Prerequisites: PUH 688 [Min Grade: C]

ENH 690. Environmental Health Perspectives. 1 Hour.

ENH 690 represents a broad overview of Environmental Health from a variety of perspectives. All MPH students in the SOPH, regardless of departmental or program affiliation, must complete this course to graduate. This course provides all MPH students the opportunity to consider how the various disciplines in public health intersect with environmental health. The course will offer insights on current research and practice, how policies influence health, and give students the opportunity to identify root causes of public health issues within the context of environmental health.

Prerequisites: PUH 601 [Min Grade: C] and PUH 602 [Min Grade: C] and PUH 603 [Min Grade: C] and PUH 604 [Min Grade: C] and PUH 605 [Min Grade: C] and PUH 606 [Min Grade: C]

ENH 691. Current Topics in Environmental Health and Occupational Health and Safety. 1-3 Hour.

Development of communication skills through objectively reviewing scientific literature; presentations and summaries of research or professional activities.

ENH 695. Seminar on Selected Environmental Health Topics. 1-9 Hour.

This course will be used as faculty design and craft course topics based on specific interests. These courses will be taught on a masters level.

ENH 697. Internship. 3 Hours.

The internship provides an opportunity for each student to work in a public health setting in a position that carries responsibility and is of particular interest. In order to register for the internship course, students must have completed all public health core coursework. Usually, this means that students must wait until their 3rd semester to complete the internship. Students must complete a minimum of 180 contact hours with the organization during the semester in which they register for the internship.

Prerequisites: (BST 601 [Min Grade: C] or BST 601Q [Min Grade: C] or PUH 601 [Min Grade: C]) and (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or PUH 602 [Min Grade: C]) and (EPI 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or PUH 603 [Min Grade: C]) and (HB 600 [Min Grade: C] or HB 600Q [Min Grade: C] or PUH 604 [Min Grade: C]) and (HCO 600 [Min Grade: C] or (PUH 605 [Min Grade: C] and PUH 606 [Min Grade: C]) or HCO 600Q [Min Grade: C])

ENH 698. Masters Directed Research. 1-9 Hour.

Independent study with guidance of appropriate faculty.

ENH 699. Masters Level Project Research. 1-9 Hour.

Research for project under direction of research project committee.

Prerequisites: GAC M

ENH 700. Scientific Basis of Environmental Health. 3 Hours.

This is an overview course that is intended to provide doctoral students with a broad understanding of the scientific principles on which environmental health is based within the context of the interaction of human activities and ecosystems, and the reciprocal impact of those interactions on human health and global ecology.

ENH 701. Advanced Environmental Chemistry. 3 Hours.

The course will describe the underlying physicochemical and mathematical formulations governing environmental physico-chemical processes including the coupling with biological media. Specific attention will be paid in understanding the physical basis of the processes and critical variables rather than memorizing the mathematical equations. The kinetics and thermodynamics of chemical transformations including redox and photolysis reactions will be introduced. Subsequently, specific environmental cases involving aquatic and atmospheric environments will be thorough investigated. Students are strongly recommended to have: (1) understanding of organic chemistry and basic thermodynamics; (2) comfort with math.

ENH 705. Special Topics in Environmental and Occupational Health Occupational Hygiene Research - Journal Club. 1-9 Hour.

This course is designed to provide advanced (doctoral) students in Environmental Health Sciences in general, and Industrial hygiene in particular an overview of the research literature and introduction in advance topics such as nanomaterials, control banding, quantitative occupational exposure assessment, etc. Students will have the opportunity to present their own research, learn about the research conducted by their peers and conduct critical review of published research.

ENH 752. Biochemical and Molecular Toxicology. 3 Hours.

This advanced course serves to equip students to understand at the molecular and cellular levels how environmental and occupational agents exert their toxic properties against specific genetic backgrounds. This course assumes a strong foundational knowledge of cell biology, RNA and DNA metabolism, and gene function, structure and regulation. This course will prepare students to apply advanced toxicology principles to agents of disease in order to understand the molecular mechanism and where interventions may be appropriate. Prerequisite: Admission into a public health or biomedical PhD program or permission of the instructor.

ENH 763. Aerosol Technology. 3 Hours.

Defines properties and behavior of aerosols from industrial hygiene and environmental perspectives. Reviews fundamental particle descriptions and critical fluid properties affecting particle behavior. Methods of defining particle size and particle behavior. Methods of defining particle size and size distribution and theories of particle kinetics and their application to particle disposition and collection This multidisciplinary course covers the fundamental principles that govern the formation, growth, measurement and modeling of particles behavior (both ambient and nanoparticles) with direct application to health sciences and engineering specialties. The course explores the quantitative evaluation of aerosol behavior including the physical and chemical parameters that govern it. Specific applications of atmospheric and occupational aerosol, bioaerosol and nanoparticles are included to link fundamental knowledge to practical implications in industrial hygiene, national security and materials technology.

ENH 770. Advanced Topics in Environmental Disasters in PUH. 3 Hours.

Examines emerging public health challenges posed by incidents involving chemicals, radiation and biological agents. Students are provided with the opportunity to undertake guided research on current topics in the field and discuss their findings with graduate students and faculty members. Course will be graded by letter. Prerequisites: ENH 610 [Min Grade: C] NOTE: If course prerequisite of ENH 610 is not met, permission of instructor is required.

Prerequisites: ENH 610 [Min Grade: C](Can be taken Concurrently)

ENH 781. Journal Club. 1 Hour.

The purpose of this course is to provide a forum in which students become comfortable critically reviewing recent refereed publications in the fields of environmental health, toxicology, occupational health, and industrial hygiene. Students will also be expected to become comfortable answering and asking questions in a scientific setting.

ENH 790. Seminar: Current Topics in ENH Sciences Research. 1 Hour.

Interactive forum in which graduate students and faculty discuss dissertation research projects and topics related to the field of Environmental Health Sciences Research through presentation of journal articles. Course is designed to develop oral communication skills for presenting scientific material to peer groups. Presentations by graduate students are followed by discussion and questions. Preq: Permission of instructor required.

ENH 796. Environmental Toxicology Laboratory Rotations. 3 Hours.

Doctoral laboratory rotations in Environmental Health Sciences. Required for First and Second year PhD students in the Industrial Hygiene and Environmental Management and Policy foci. Preq: Permission of instructor required.

ENH 798. Doctoral Level Directed Res. 1-9 Hour.

Independent study with guidance of appropriate faculty.

ENH 799. Dissertation Research. 1-9 Hour.

Research for dissertation under the direction of the dissertation committee. Preq: Must be admitted to candidacy before registering for this course.

Prerequisites: GAC Z

EPI-Epidemiology Courses**EPI 600. Introduction to Epidemiology. 3 Hours.**

EPI 600 is an introductory course designed to teach graduate level public health students the basic principles, methods, and applications of epidemiology. This course is a CORE requirement for non-Epidemiology MPH majors.

EPI 602. Epidemiology of Chronic Diseases. 3 Hours.

This course will explore the breadth and depth of the epidemiology of chronic diseases including classification, surveillance, frequency, distribution, etiology, natural history, risk factors, and control. It will address details of large-scale epidemiologic studies in cardiovascular diseases and cancer, and will discuss epidemiologic papers relating to the use of various study designs. The course will be presented in three modules: (1) Overview, Risk Factors and Control of Chronic Diseases; (2) Epidemiology of Cardiovascular Diseases; (3) Epidemiology of Cancer; and Other Chronic Diseases. Besides the course master, guest lecturers will participate in teaching the course.

Prerequisites: EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]

EPI 603. Injury-Epidemiologic Principles and Prevention Strategies. 3 Hours.

Concepts and methods of epidemiology applied to injury; epidemiology of major injury types, utilization of injury data sets; development and evaluation techniques of preventive strategies. EPI 600 or EPI 610 is a recommended prerequisite but is not required.

EPI 605. Epidemiology of Infectious Diseases. 3 Hours.

The course provides an introduction to basic principles of infectious disease epidemiology, surveillance, and control. Time is also dedicated to critical analysis of the magnitude, distribution, risk factors, and public health significance of selected infectious diseases in community and institutional settings. While the primary geographic focus is the U.S., international comparisons and perspectives are included. The course focuses on the major infectious diseases affecting developing nations and on diseases of major current interest. The course also provides an overview of vaccinology principles, current immunization strategies, their public health rationale, and use of vaccines in disease control and eradication.

Prerequisites: EPI 610 [Min Grade: C]

EPI 607. Fundamentals of Clinical Research. 3 Hours.

This course will provide an overview of principles and practices related to the study of determinants and outcomes of medical interventions. Methods for conducting epidemiologic research in the "clinic", assessing the validity of diagnostic and screening tests, measuring therapeutic efficacy and safety, and describing the natural history of disease will be reviewed. EPI 600 or EPI 610 is a recommended prerequisite but not required.

EPI 609. Introduction to Pharmacoepidemiology and Drug Safety. 3 Hours.

The purpose of the course is to 1) introduce to students the emerging field of pharmacoepidemiology (PE) and comparative effectiveness research (CER); 2) to have an overview of the shared and unique methodological issues that commonly and negatively affects the validity and interpretation of PE and CER research; and 3) to introduce methods in study design and data analysis to address such issues. The course is a requirement for the MSPH Pharmacoepidemiology and Comparative Effectiveness Research track. NOTE: Introductory training in epidemiology (EPI 610 or BST 611) is recommended but not required.

EPI 610. Principles of Epidemiologic Research. 3 Hours.

Concepts, philosophy, and methods of epidemiology. Measures of disease frequency, association and impact; study design and data analysis, indices of disease and health; overview of major categories of acute and chronic disease, outbreak investigations, and screening. EPI 610 is a track requirement for MPH - Epidemiology and MSPH – Epidemiology majors, and is also open to other graduate students at the instructor's discretion.

EPI 614. Epidemiologic Methods Applied to Comparative Effectiveness Research. 3 Hours.

This course will focus on methodological issues pertaining to the design, analysis and interpretation of comparative effectiveness research studies. Special focus will be placed on comparative effectiveness research studies using a non-experimental design and large data base analyses. This course is intended for Master of Science in Public Health and doctoral students in epidemiology, biostatistics, or health care and policy. Doctoral students in other disciplines as well as others interested in comparative effectiveness research are also welcome to enroll with the instructor's permission.

Prerequisites: EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]

EPI 616. Environmental Epidemiology. 3 Hours.

Design and conduct of studies examining health effects of environmental exposures. Strengths and limitations of research strategies and interpretation of study results. Areas of interest include air and water pollution, lead, and biological marker outcomes.

Prerequisites: EPI 610 [Min Grade: C]

EPI 618. Fieldwork in Public Health. 2 Hours.

Application of public health principles in communicable disease control and environmental health programs carried out at Jefferson County Department of Health.

Prerequisites: EPI 605 [Min Grade: C] and EPI 610 [Min Grade: C]

EPI 619. Infection Prevention and Hospital Epidemiology. 3 Hours.

The course will provide students with a basic understanding of the area of hospital epidemiology and infection prevention. Notably, the course will cover a review of basic epidemiological methodology, and will then focus on the main areas of surveillance that are critical to infection prevention in addition to methodologies that are specific to hospital epidemiology.

Prerequisites: EPI 610 or equivalent introduction to epidemiology course as approved by the course director.

Prerequisites: EPI 610 [Min Grade: C]

EPI 621. HIV/AIDS and STDs. 3 Hours.

Basic biology and pathogenesis, historical and current trends, domestic and international epidemiology, determinants of spread, immunogenetics and host susceptibility, options for prevention, surveillance and control of sexually transmitted diseases (STD's) and HIV/AIDS. If not Public Health student permission of instructor is required.

Prerequisites: EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]

EPI 622. An Introduction to REDCap (Research Electronic Data Capture). 3 Hours.

The purpose of this course is to introduce students to the principles of database design and management using REDCap. The course will use the University of Alabama at Birmingham's response to the COVID-19 pandemic as a case study. The course will provide students with an overview of the principles of and best practices for data collection and management as well as the skills to develop and maintain a database using REDCap. The specific skills to be acquired include creating database forms and fields, creating field validation rules, creating centralized and distributed data collection systems, creating reports, importing and exporting data, quality assurance and control procedures, among others. SAS will be used to illustrate REDCap's ability to interface with other software packages to facilitate data analysis and report; however, students need not have experience using SAS. The course will also briefly review other database tools include Microsoft Access and Filemaker Pro.

EPI 624. Introduction to Data Analysis with SAS. 2 Hours.

The purpose of this course is to introduce students to the basics of SAS programming. Topics covered will include creation/importation of datasets, working with SAS variables, manipulation of datasets (e.g., combining and subsetting datasets), and SAS syntax to produce descriptive statistics (e.g., frequencies, means) and perform basic statistical procedures (e.g., chi-square, t-test).

Prerequisites: EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]

EPI 625. Quantitative Methods in Epidemiology. 3 Hours.

The course will provide students with the knowledge of how to perform basic analyses utilized in epidemiological research. The course will be segmented into four modules, with three modules covering how to properly analyze ecological, cross-sectional, cohort, and case control study designs. The course will focus heavily on performing the analyses in SAS, and will continue to expand upon many of the concepts in SAS programming covered in EPI 624. The statistical methods covered will include, but are not limited to, bivariate analyses such as chi-square, t-test, and ANOVA; correlation; and regression methods such as logistic regression, Poisson regression, and Cox proportional hazards regression.

Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C] and (EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]) and EPI 624 [Min Grade: C]

EPI 627. Data Analysis and Presentation of Epidemiologic Studies. 3 Hours.

Analyze data from an epidemiologic study, addressing a specific questions, and prepare a manuscript from the analysis. There are 3 possibilities regarding choice of data: 1) from a list of the instructor's datasets, 2) public use data, 3) from the student's research. Students working on an MSPH or another degree project may use data for that degree-project with approval of their advisor and course master. Upon completion of the course, the student should be able to analyze data from an epidemiologic study and prepare a manuscript.

Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C] and EPI 610 [Min Grade: C] and EPI 624 [Min Grade: C] and EPI 625 [Min Grade: C]

EPI 635. Genetics in Public Health. 2 Hours.

This course will provide a topical overview of issues in public health genetics. The purpose of this course is to introduce students to the complex issues involved in applying and integrating genetic technology and information into public health. Must have permission of instructor to register.

EPI 680. Topics in Clinical Research. 2 Hours.

Provide health sciences professionals interested in clinical trials, clinical epidemiology, and other forms of population research with both essential principles and specific technical knowledge in a variety of areas relevant to the conduct of biological and behavioral investigation of human subjects. NOTE: Limited to health professionals planning clinical research careers who have been accepted into the MSPH in Clinical Research. This course begins in the Spring term and extends into the Summer term. Registration for this course is during the Summer semester. Please contact the Program Coordinator for the course syllabus and course schedule.

EPI 681. Special Topics in Epidemiology Research. 1-3 Hour.

To engage infectious disease research practice encompassing design, conduct, analysis, and interpretation. Students participate in supervised research and/or in research design. Doctoral students are expected to engage in supervised research. NOTE: Permission of instructor.

EPI 682. Gorgas Course in Tropical Med. 3-9 Hours.

Hands-on exposure to tropical diseases and emerging pathogens in various teaching formats: didactic lectures, roundtables, laboratory work, clinical and hospital rounds, case conferences, computer training, field trips and independent study. Course is held in during the Spring Term in Lima, Peru. NOTE: 9 hours (3 or Course can be taken for 3, 6 hours are also accepted with or 9 hours; however, evaluation will be restricted to selected sections of the course). course. Spring (Freedman).

EPI 689. Epidemiology Integrative Learning Experience. 3 Hours.

The EPI ILE or capstone course represents a culminating experience that allows students to demonstrate synthesis of MPH foundational and epidemiology concentration competencies. Students will apply their epidemiology and biostatistics skills by designing, analyzing, and disseminating findings of a research project in the form of a high-quality written product. All MPH Epidemiology students must complete this course to graduate in the final term of the MPH program.

Prerequisites: EPI 625 [Min Grade: C] and PUH 688 [Min Grade: C]

EPI 690. Population and Health Outcomes Research Seminar Series. 1 Hour.

The purpose of this class is to provide an opportunity for students interested in population and health outcomes research to participate in seminars related to methodology and career development and to present their work.

EPI 695. Epidemiology Seminar. 1 Hour.

The purpose of the epidemiology seminar series is to provide a venue for faculty and students of epidemiology to participate in the presentation of a variety of topics and concepts related to the field of epidemiology, biostatistics and public health.

EPI 698. Master's Level Directed Research Epidemiology. 1-9 Hour.

Independent study with guidance of appropriate public health faculty.

EPI 699. Master's Level Project Research Epidemiology. 1-9 Hour.

Research for project under direction of research committee.

Prerequisites: GAC M

EPI 703. Grant Proposal Writing. 3 Hours.

To provide the student with information about grant writing and practice in preparing a grant proposal for submission. The proposal must relate to an epidemiologic topic. Human subjects issues are discussed. NOTE: Must be a doctoral student or obtain permission of instructor to enroll.

EPI 704. Advanced Epidemiologic Methods. 3 Hours.

This course provides an advanced introduction to fundamental epidemiologic concepts and methods, including causal inference, bias, and study design. This course is the first course in the sequence of the three required core epidemiology courses for doctoral students in epidemiology.

EPI 706. The Epidemiology of Cardiovascular Disease. 2 Hours.

The purpose of this course is to provide exposure to the epidemiology of cardiovascular disease.

EPI 710. Analysis of Case Control Studies. 3 Hours.

This course is designed to provide doctoral students in epidemiology with practical experience in the analysis and interpretation of data from case-control studies. Specific aims are: To outline a strategy for data analysis and review relevant methodologic issues and to apply stratified analysis methods and regression models in the study of diseases of multifactorial etiology. Preq: Requires permission of instructor.

Prerequisites: EPI 704 [Min Grade: C]

EPI 712. Nutritional Epidemiology. 3 Hours.

Nutritional epidemiology will cover core concepts in human nutrition including nutrient classification, nutrient sources, nutritional deficiencies, nutritional excesses, recommended daily allowances, basic anthropometry, dietary assessment methods in free-living populations, validation of dietary assessment methods, identification of biomarkers of dietary intake, study designs used in nutritional epidemiology, issues in the analysis and presentation of dietary data, diet-disease associations, gene-diet associations and special topics in nutrition (e.g., folic acid and neural tube defects, fatty acids and the metabolic syndrome, diet and obesity, vitamin A and immune function, vitamins and mother-to-child transmission of HIV, etc).

EPI 713. Cancer Epidemiology and Control. 3 Hours.

In this course students will learn what is known about the causes of cancer and the control measures used to decrease cancer incidence, decrease cancer mortality, extend cancer survival, and improve quality of life for cancer patients.

EPI 720. Analysis of Follow-Up Studies. 3 Hours.

This course is designed to provide doctoral students in epidemiology with practical experience in the analysis and interpretation of data from follow-up studies. Specific aims are: to outline a strategy for data analysis and review relevant methodologic issues and to apply stratified analysis methods and regression models in the study of diseases of multifactorial etiology.

Prerequisites: EPI 710 [Min Grade: C]

EPI 721. HIV/AIDS and STDs. 3 Hours.

The course will cover the epidemiology, prevention and control of Sexually Transmitted Diseases (STDs) including the human immune deficiency virus (HIV) infection in both the domestic and international settings. EPI 621 is intended as an elective for second year students and students who have a graduate degree in the Medical Health Professions who are enrolled in any degree track in the School of Public Health. It is considered an elective for the MPH and MSPH programs in Epidemiology. EPI 721 is intended only for doctoral students in the School of Public Health.

Prerequisites: EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]

EPI 731. Genetic Epidemiology. 4 Hours.

This course will cover core concepts of designs, methods and statistical tools in genetic epidemiology studies for determining the contribution of genes to disease risk. Methods for incorporating genetic markers into conventional epidemiologic study designs as risk factors including genetic risk models, familial correlations, migration and admixture, quantitative and qualitative traits, association and linkage analyses in family based designs, allele/haplotype frequency estimation, Hardy Weinberg Equilibrium and linkage disequilibrium and application in both family and population based studies will be discussed. Methods for gene-gene and gene-environment interaction assessment, genome wide association studies are also presented. Students not meeting the prerequisites must get permission from the instructor.

Prerequisites: EPI 610 [Min Grade: C] and BST 611 [Min Grade: C] or BST 621 [Min Grade: C]

EPI 781. Special Topics in Epidemiology Research. 1-3 Hour.

To engage infectious disease research practice, encompassing design, conduct, analysis, and interpretation. Students participate in supervised research and/or in research design. NOTE: Doctoral students are expected to engage in supervised research and must obtain permission of instructor.

EPI 790. Doctoral Seminar in Epidemiology. 2 Hours.

In depth study of several areas of epidemiologic methodology not covered in other courses. Students responsible for selecting and presenting topics. Considerable reading and outside preparation required. NOTE: Requires permission of instructor.

EPI 795. Epidemiology Seminar. 1 Hour.

The purpose of the epidemiology seminar series is to provide a venue for faculty and students of epidemiology to participate in the presentation of a variety of topics and concepts related to the field of epidemiology, biostatistics and public health.

EPI 798. Doctoral Level Directed Research Epidemiology. 1-9 Hour.

Independent study with guidance of appropriate faculty.

EPI 799. Dissertation Research. 1-9 Hour.

Research for dissertation under direction of dissertation committee.

Prerequisites: GAC Z

GHS-Global Health Studies Courses

GHS 600. Fundamentals of Global Health. 3 Hours.

This course is designed to introduce students to the foundations of global health programs, policies and practices. Students will explore the history of the field of global health, including its roots in colonial exploration, tropical medicine, and imperialism, and the current paradigms shifting the field to a collaborative and transnational effort to improve health equity for all and reduce the global burden of diseases. The course will emphasize the main concepts necessary to examine the critical links between health outcomes and social, environmental, and economic determinants at multiple levels of scale and across low, middle, and high-income countries. The course will be global in coverage but will focus on the burden of disease in low- and middle-income countries and on the health of the poor in low-resource or resource-scarce settings.

GHS 601. Global Health Partnerships and Development. 3 Hours.

Global health is an emerging and evolving field of health research and practice. Working in global health means that researchers, practitioners, and advocates work alongside and within a complex system of governance that has emerged over time and in response to very significant global health events. This course offers a critical analysis of global health programs and partnership initiatives over time and their impact on health and development. Using a historical lens to examine the growth of global health as a field of research and practice, this course examines the very significant paradigm shift from the field of international health to global health. By exploring key historical events and interventions, this course also explores why global health diplomacy is so important to cooperation among countries as well as global health security and how global health programs are funded, and programs and initiatives are implemented in various bilateral, multilateral, and private-public partnerships.

GHS 603. Immigrant, Migrant, Refugee Health. 3 Hours.

This course will introduce students to the inter-relationships between migration and health, focusing on the myriad of health issues experienced by migrant populations. The course will focus on both communicable and non-communicable health issues among migrating populations. The course will examine health issues among all types of migrant populations with a particular focus on the categories of 'displaced peoples', and the resultant state and humanitarian responses surrounding health and social (public health) services. This course frames global health in broad terms to include the underlying social and economic conditions, including climate change, economic underdevelopment, and political instability, which displace people, or motivates them to migrate, and which present barriers to achieving health, mental health, and wellbeing in immigrant, migrant, and refugee communities. We explore how violence, social suffering, health, disease, and mental health are intertwined with displacement and migration.

GHS 604. Infectious Diseases of Global Health Significance. 3 Hours.

The purpose of this course is to equip participants with up-to-date knowledge of global pandemic preparedness and control measures necessary to protect present and future generations. This course will expose students to Global Health agreements such as the pandemic treaty and International Health regulations. The course also challenges students to find new innovative strategies for the prevention of the big 3 (HIV, TB & Malaria) infectious diseases and familiarize students with global health priorities. To achieve this, the course will introduce concepts of disease infectious disease transmission and disease transmission dynamics and introduce the principles of global health security. The course adopts multidisciplinary, interdisciplinary, and transdisciplinary perspectives in studying the factors that contribute to the impact of pandemics and major outbreaks using Smallpox, malaria, and COVID-19 as an important historical lens. Students will explore some of the WTO policies that facilitate or preclude the discovery of vaccines and distribution of vaccines and medical commodities during pandemics. Throughout the course, emphasis will be placed on equity, one health, and universal health coverage.

GHS 605. Disabilities and Global Health. 3 Hours.

This course explores current paradigms and models for defining and categorizing disability based on various international agreements and documents.

GHS 606. Critical Issues in Global Maternal and Child Health. 3 Hours.

This course is an elective module for students enrolled in UAB Certificate in Global Health program. Mothers and children in developing countries are among the most vulnerable and disadvantaged sectors of the world's population. This course defines the Maternal and Child Health (MCH) discipline, describes the current practices and challenges, and compares global strategies and potential solutions.

GHS 607. Global Health and Gender. 3 Hours.

Sex and gender are both important determinants of health. Biological sex and socially constructed gender interact to produce differential risks and vulnerability to ill health, differences in health seeking behavior, in health care providers' response and in health outcomes for women and men. Gender differences in morbidity and mortality represent 'avoidable' and/or 'unfair' inequalities in health. Because gender is socially constructed, gender-based inequities in health are amenable to policy and program interventions. This course is designed to help public health students, policy makers, health care providers and health researchers understand concepts related to gender and to apply them in an analysis of specific policies and programs. The course will enable participants to identify the gendered nature of issues like violence and sexuality and how these affect health. The course provides participants with support to apply a gender perspective to program planning, policy analysis, or a research design as part of their final assignment.

GHS 608. Food and Nutrition in Resource Limited Settings. 2 Hours.

This course will provide to graduate and professional students a general overview of the facts, research finding underlying nutrition and the relationships to acute and chronic diseases worldwide and their impact productivity and economic development.

GHS 609. Environmental Health in Resource Limited Settings. 3 Hours.

Demonstrate an understanding and appreciation of the complex roles played by the environment as a major determinant of health and identify the major environmental health issues confronting populations in a resource-limited setting.

GHS 610. Refugee Health Care. 3 Hours.

This course is one of the elective courses of the UAB Global Health Studies Certificate program, and is designed for professionals undertaking the GHS continuing education certificate as well as UAB graduate students enrolled in the GHS graduate certificate program. The course addresses the issues of refugees and the agencies concerned with their protection, human rights, and coordination and provision of care.

GHS 611. International NGO Management. 3 Hours.

The course addresses issues for managers of NGOs primarily at the field level of operation with special emphasis on project management. It begins with the history of international organizations and their roles in aid, development, and human rights. It follows with analysis of NGO organizational structure and function, roles, and the responsibilities of various stakeholders at the macro and micro level. Project development, planning, implementation, and evaluation will be addressed. Management principles and skills will also include budget preparation and staff/human resource management.

GHS 620. Infect Dis Surveillane & Contr. 3 Hours.

The primary focus of the course is vector ecology and biology, infectious disease surveillance and control, and water and sanitation in a developing country, with an emphasis on field and community-based learning. This class will take place in Jamaica and you must be accepted by the Sparkman Center for Global Health.

GHS 629. Intensive Global Health Training - SIFAT. 3 Hours.

Become a better Global Citizen by learning critical issues on Household Energy use in the developing world that affect health, environmental sustainability, gender equity, economics, and the development of millions of families and communities globally. Learn what you can do to make a difference. Be a part of the solution for a better world!.

GHS 630. Field Training in World Hunger and Malnutrition: Practical Skills to Make a Difference. 3-6 Hours.

This two week intensive field training course will take place at SIFAT's 176-acre international training campus in Lineville, AL. Students will attend didactic sessions and participate in hands on activities and simulations. SIFAT trainers are experienced in international development and cross-cultural dynamics. On-site Field Training.

GHS 645. Comparative Health Systems and Policy. 3 Hours.

This course provides a comprehensive survey of a number of healthcare systems from low-, middle-, and high-income countries, situating the U.S. and other national experiences in a comparative cross-national frame. The course provides frameworks for students to analyze in diverse settings the different ways that health policy is developed and implemented, given the resources, capacities, and systems of each country. The course will also examine the ways in which health care is organized and delivered, along with underlying global public health principles and impacts. By comparing health systems and policies, globally, students will reflect on how a country's social-historical context and values, geography, polity, and economy influence the way that health care is provided and its relationship with population health, as well as how health policies influence the quality of life.

GHS 649. Interprofessional Global Health Service Learning. 3 Hours.

This course provides students with an opportunity to work in small teams to address a global health problem in collaboration with a community partner. The global health problem to be addressed can be at a local site (with a local agency or partner), a site within the US, or an international site (with a US or non-domestic agency or partner). Interprofessional teams of 4-6 graduate and professional students will apply concepts and theories related to global health, interprofessional collaboration, team building, leadership, community partnerships, business models, and appropriate framework for developing and implementing a plan to address a specific global health problem with a community partner.

GHS 690. Special Topics in Global Health. 1-6 Hour.

This special topic course will be used in the graduate global health certificate program to cover emerging issues or specialized content not represented in the main curriculum. Prerequisites: Permission of instructor; other prerequisites may be required.

HB-Health Behavior Courses**HB 600. Social and Behavioral Sciences in Public Health. 3 Hours.**

Social and behavioral science theories and strategies in public health will be discussed in relation to preventing disease and promoting health over the life course. The course is comprised of two major sections: (1) overview of fundamentals of social and behavioral sciences in public health and (2) social and behavioral science research and strategies and application of social and behavioral sciences in public health practice and policy.

HB 601. LGBTQ Research Methods. 3 Hours.

The purpose of this course is to provide focused training in methods relating to LGBTQ health. Students taking the course will be provided research skills to assess and address the factors driving SGM risk and resilience in general, with attention to intersectional identities (e.g., race and ethnicity, age, ability, region, religion, and rurality). In addition to building research skills, the course will include topics such as 'equitable budgetary practices,' enabling students to meaningfully and equitably engage community partners throughout the research cycle.

Prerequisites: HB 607 [Min Grade: C] or HB 707 [Min Grade: C]

HB 602. Alcohol and Drug Abuse. 3 Hours.

History and theory of human substance use and abuse. Empirical foundations of alcohol and drug abuse, diagnosis, assessment, treatment, and prevention. Course will be graded by letter. 3 hours.

HB 603. Obesity Prevention & Intervention. 3 Hours.

The aim of this course is to provide students with theoretical and practical knowledge required to develop, implement, and evaluate obesity intervention and prevention programs. The course covers both pediatric and adult obesity intervention and prevention with a focus on lifestyle (dietary intake, physical activity) and environmental factors. Course will be graded by letter. 3 hours.

HB 604. LGBTQ Health and Wellbeing Service Learning. 3 Hours.

The service-learning course will examine LGBTQ health and wellbeing. Specifically, it will take the knowledge learned from courses associated with the LGBTQ health and wellbeing certificate program and enable the students the opportunities to put it into practice. Students will have a range of opportunities to explore what LGBTQ health and wellbeing looks like in practice. Topics include issues related to LGBTQ risk and resilience, policy and programmatic approaches to LGBTQ health and health and wellbeing, as well as the concrete advocacy and leadership skills needed to address the most pressing inequities faced by LGBTQ communities in Alabama and the Deep South. Service-learning is a high-impact practice that combines community service with structured academic learning, including preparation, and reflection.

Prerequisites: HB 607 [Min Grade: C] or HB 707 [Min Grade: C]

HB 605. Physical Activity in Public Health. 3 Hours.

This seminar course is an introduction to research and practice related to physical activity promotion from a public health perspective and will describe health benefits, epidemiological data, national recommendations and plans, and global initiatives related to physical activity. Course will be graded by letter. 3 hours.

HB 607. Introduction to LGBTQ Health. 3 Hours.

This course will survey current LGBTQ health topics, including: 1) Defining evolving terms and concepts; 2) Risk and resilience - physical, mental, and behavioral health among LGBTQ individuals; 3) Theories guiding LGBTQ research; 4) Analytic considerations when conducting LGBTQ health inequity research; 5) Ways to improve the provision of services for LGBTQ individuals; 6) Overview of key, local, national, and global policies impacting LGBTQ individuals; and 7) Meaningful integration of LGBTQ communities in policy, programs, and research.

HB 609. African-American Health Issues. 3 Hours.

This is an intermediate level course that focuses on: epidemiological data illustrating the health risks experienced by African-Americans; sociocultural factors essential for understanding and enhancing the health of African-Americans; effective health-related prevention programs for African-Americans.

HB 611. Mental Health as a Public Health Issue. 3 Hours.

This course is designed to increase knowledge of mental illness at the individual, community, and population levels. It also covers historical and contemporary models and research on the etiology, diagnosis, assessment, treatment and prevention of mental and other behavioral health disorders.

HB 612. Examining Health Inequities in Social and Behavioral Sciences. 3 Hours.

This course is designed to provide a comprehensive overview of race/ethnic health disparities/health inequities in the U.S. Both historical context and more current perspectives of identified determinants of health will be discussed as contributors to current health inequities.

HB 613. Health Promotion Practices and Disability. 3 Hours.

This course will examine the population of people living with a disability and health promotion approaches at multiple levels (individual, social, environmental, and policy). One in five people in the U.S. has a disability and many people will be affected by disability, whether personally or through a loved one, during their lifetime. Advancements have been offered by the medical model of disability towards disability prevention; however, the addition of functional and social models of disability provide a more complete view of how to enhance the lives of millions of Americans and reduce economic burden.

HB 615. Homelessness, Housing and Health. 3 Hours.

The course will begin with a discussion of the concept of homelessness and housing instability and their impact on health. We will discuss how homelessness is defined and enumerated, pathways into homelessness, and multi-level interventions to prevent and end homelessness. We will also explore a series of special topics focusing on populations that may be particularly vulnerable to homelessness as well as the intersection between homelessness and experience of particular health conditions and outcomes.

HB 616. Psychophysiology and Public Health: The Interface of the Mind/Body Connection. 3 Hours.

Psychophysiology is a branch of neuroscience that analyses the interfaces of mental states and physiological responses, and how they interact to affect one another and subsequently drive behaviors. This course introduces students to basic knowledge about neuroanatomy, learning/cognition, neurological processes, memory, human development, brain disorders, response patterns, and behavior change strategies as they relate to public health issues such as sexual behavior, drug addiction, cigarette smoking/vaping, and obesity. The course will also introduce principles of stress management and neurofeedback techniques. A biopsychosocial framework will be applied to a range of public health domains, using Maslow's Hierarchy of Needs to inform context and priorities for interventions.

Prerequisites: HB 624 [Min Grade: C] or HB 624Q [Min Grade: C]

HB 617. Implementation Science and Disability Health. 3 Hours.

The course provides lectures on implementation science and a deep dive into a premier, national program for people with disability. Implementation science helps researchers to understand how and why a program is effective in order for it to be translated into practice. Students will gain a better understanding of when and how to use implementation science methods through a series of lectures and multiple assignments including a grant proposal. In addition, this course provides experiential learning opportunities in disability health and community engagement.

HB 618. Suicide Prevention. 3 Hours.

This course will explore the science of suicide prevention. Topics will include exploring the science of suicide through the five pillars of public health, including epidemiology, biostatistics, environmental health, health care organization & policy, and health behavior. Students will also become certified in QPR Gatekeeper training and be responsible for the development of a public health communications project.

HB 624. Advanced Social and Behavioral Science Theory. 3 Hours.

The aim of this course is to provide students with a broad understanding of theories of health behavior change with a strong focus on those theories that are most widely used in research and practice. Emphasis will be given to the discussion and elaboration of important theoretical concepts as well as their application in specific health behavior interventions. This class will take an ecological perspective and discuss theories that approach behavior change from various different levels. Basic theories that are covered in this course include individual level models (Health Belief Model, Theory of Planned Behavior, Transtheoretical Model), interpersonal level models (Social Cognitive Theory), and community level models (community organization and other participatory models like Community Based Participatory Research, Diffusion of Innovations). 3 hours.

HB 625. Dissemination and Implementation in Health. 3 Hours.

The course will offer an introduction to dissemination and implementation science, an interdisciplinary field focused on improving the transition of evidence-based health practices, programs, and interventions from research studies into "real-world" settings.

Prerequisites: HB 600 [Min Grade: C]

HB 630. Health Communications: Theory and Practice. 3 Hours.

This course is designed to investigate the role of communication theories and methods in promoting public health and preventing disease. Both theoretical background in communication and behavioral science and practical communication/intervention development methods will be addressed.

HB 636. Developing Interventions to Promote Public Health. 3 Hours.

This course is intended to provide students with a comprehensive understanding of the range and diversity of intervention approaches to behavior change and their application in public health. Emphasis will be placed on developing skills for designing interventions: a) in various public health settings, b) for specific population subgroups, c) based on determinants identified to be most influential and amenable to intervention, and d) within the confines of available resources.

Prerequisites: HB 624 [Min Grade: C] or HB 624Q [Min Grade: C]

HB 639. Survey Design and Analysis in the Social and Behavioral Sciences. 3 Hours.

This course provides an in-depth treatment of survey design and elementary data analysis procedures commonly associated with social and behavioral research. What are the best practices for asking individuals potentially uncomfortable questions about risky health behaviors? How do we measure the reliability and validity of self-reported behaviors? This course addresses these issues in addition to those of sampling hard-to-reach populations, best practices in questionnaire design, an overview of index and scale construction, and an elementary introduction to data entry and analysis of survey data using common software packages.

HB 641. Research Methods in Behavioral Science. 3 Hours.

Review of research methodology in behavioral sciences. Formulation of research questions, causality, experimental and quasi-experimental designs, reliability and validity, reporting findings. Course will be graded by letter.

HB 643. Health Program Evaluation. 3 Hours.

Principles and procedures to evaluate health promotion/disease prevention programs: data collection methods, instrument-scale development, measurement, evaluation designs and analysis of case studies of disease prevention literature on evaluation.

Prerequisites: HB 641 [Min Grade: C] or HB 641Q [Min Grade: C]

HB 660. Adolescent Health: A Social and Behavioral Perspective. 3 Hours.

Designed to provide students with the most current knowledge and analysis of issues influencing the health and well-being of adolescents. Theoretical frameworks that draw on an ecological perspective will provide a better understanding of how families, peers, schools, and neighborhoods influence risk and protective factors in youth. Emphasis will be placed on the relevance of adolescent health issues for the science of Health Behavior and the broader public health arena.

HB 681. MSPH Directed Research I. 3 Hours.

MSPH Directed Research I provides MSPH students with the opportunity to work closely with a faculty mentor in the design of a health behavior intervention and collection of data. This course is the first in a three-course sequence that culminates in the presentation of research findings to their faculty mentor and other faculty in a public forum. As such, HB 681 focuses on the development of a health behavior intervention in an area of the student's expertise, including consideration of the PRECEDE/PROCEED model, study population, data collection methods, IRB approval, study registration, previous research, and other activities in consultation with their HB mentor.

HB 682. MSPH Directed Research II. 3 Hours.

MSPH Directed Research II provides MSPH students with the opportunity to work closely with a faculty mentor in the design of a health behavior intervention and collection of data. This course is the second in a three-course sequence that culminates in the presentation of research findings to their faculty mentor and other faculty in a public forum. As such, HB 682 focuses on collection and analysis of data, interpretation of results, and significant progress in the drafting of a scientific manuscript reporting the research project and preliminary results, and other activities in consultation with their HB mentor.

Prerequisites: HB 681 [Min Grade: P]

HB 683. MSPH Directed Research III. 3 Hours.

MSPH Directed Research III provides MSPH students with the opportunity to work closely with a faculty mentor in the design of a health behavior intervention and collection of data. This course is the third in a three-course sequence that culminates in the presentation of research findings to their faculty mentor and other faculty in a public forum. As such, HB 683 focuses on analysis of data, interpretation of results, completion of a scientific manuscript reporting the research project and preliminary results, other activities in consultation with their HB mentor, and the presentation of results in a public forum.

Prerequisites: HB 681 [Min Grade: P] and HB 682 [Min Grade: P]

HB 689. Health Behavior Integrative Learning Experience. 2 Hours.

The HB ILE or capstone course represents a culminating experience that allows students to demonstrate synthesis of foundational and concentration competencies. This course will provide students with the opportunity to use skills gained during the MPH Health Behavior program to develop a high-quality written product that addresses health disparities from a behavioral and social sciences perspective and is ideally useful for an identified stakeholder. All MPH Health Behavior students must complete this course to graduate in the final term of the MPH program.

Prerequisites: PUH 688 [Min Grade: C]

HB 692. Principles and Practices of Community Organization. 3 Hours.

Seminar designed as an integrative experience for persons working with community groups. The focus is on learning to use available resources and advocating change to maximize community involvement.

HB 695. Seminar on Selected Health Behavior Topics. 1-3 Hour.

Seminar covering a variety of health behavior topics.

HB 698. Master's Level Directed Research Health Education. 1-9 Hour.

Independent study with guidance of appropriate faculty. Includes activities such as literature review and evaluation. Course will be graded as Pass/No Pass. 1 - 9 hours.

HB 699. Master's Level Project Research Health Education. 1-9 Hour.

Research for project under direction of research project committee. Course will be graded as Pass/No Pass. 3-6 hours.

Prerequisites: GAC M

HB 701. Theory-Based Measurement Development. 3 Hours.

The aim of this course is to introduce students to measurement development based on well-specified behavioral theories. This course will review and discuss key issues related to measurement development such as item/scale development, number of factors to retain rotation options and statistical programs. Prerequisite: Requires knowledge of elementary probability and statistics for non-statistics majors and BST 611. Course will be graded by letter. 3 hours.

Prerequisites: BST 611 [Min Grade: C]

HB 703. Writing for the Behavioral Sciences. 3 Hours.

The aim of this course is to develop and fine-tune scientific writing proficiency. In this course, students will read and critique a variety of books, essays, and articles about science and medicine, and complete numerous writing assignments and participate in peer review.

HB 707. Introduction to LGBTQ Health. 3 Hours.

This course will survey current LGBTQ health topics, including 1) Defining evolving terms and concepts; 2) Risk and resilience - physical, mental, and behavioral health among LGBTQ individuals; 3) Theories guiding LGBTQ research; 4) Analytic considerations when conducting LGBTQ health inequity research; 5) Ways to improve the provision of services for LGBTQ individuals; 6) Overview of key, local, national, and global policies impacting LGBTQ individuals; and 7) Meaningful integration of LGBTQ communities in policy, programs, and research.

HB 709. African American Health Issues. 3 Hours.

This course will explore issues of both physical and psychological issues of African Americans historically and today. Historical, sociocultural and economic factors that affect the quality and utilization of healthcare services in African American communities will be examined. We will examine the risk and protective factors for specific health conditions. We will also identify evidence-based ways to engage the community and draw on individual and community strengths in prevention and treatment. Students will be equipped and empowered with the knowledge and skills required to develop a Community Action Plan aimed to improve the effectiveness of interventions targeting the African American community.

HB 710. Mental Health Promotion and Professional Development. 1 Hour.

In this course, students will gain knowledge about mental health topics relevant for graduate students, professional students, and postdoctoral fellows and learn skills for managing personal mental health, supporting others' mental health, and intervening when concerned about someone who may be considering suicide. In addition to course credit, students will earn a certificate in QPR Suicide Gatekeeper Training.

HB 711. Advanced Public Mental Health Promotion: Service Learning. 3 Hours.

This advanced course on mental health promotion focuses on evidence-based approaches, innovative service delivery models, and research-practice partnerships to address public mental health. Students acquire skills and hands-on experience related to thinking critically about evidence based approaches, innovative service delivery models, and research-practice partnerships to improve dissemination and implementation.

HB 712. Examining Health Inequities in Social and Behavioral Sciences. 3 Hours.

This course is designed to provide a comprehensive overview of race/ethnic health disparities/health inequities in the U.S. Both historical context and more current perspectives of identified determinants of health will be discussed as contributors to current health inequities.

HB 715. Examining Health Inequities in Social and Behavioral Sciences. 3 Hours.

This course is designed to provide a comprehensive overview of race/ethnic health disparities/health inequities in the U.S. Both historical context and more current perspectives of identified determinants of health will be discussed as contributors to current health inequities.

Prerequisites: HB 641 [Min Grade: C] and HB 643 [Min Grade: C]

HB 716. Psychophysiology and Public Health: The Interface of the Mind/Body Connection. 3 Hours.

Psychophysiology is a branch of neuroscience that analyses the interfaces of mental states and physiological responses, and how they interact to affect one another and subsequently drive behaviors. This course introduces students to basic knowledge about neuroanatomy, learning/cognition, neurological processes, memory, human development, brain disorders, response patterns, and behavior change strategies as they relate to public health issues such as sexual behavior, drug addiction, cigarette smoking/vaping, and obesity. The course will also introduce principles of stress management and neurofeedback techniques. A biopsychosocial framework will be applied to a range of public health domains, using Maslow's Hierarchy of Needs to inform context and priorities for interventions.

Prerequisites: HB 624 [Min Grade: C] or HB 624Q [Min Grade: C]

HB 724. Advanced Social and Behavioral Science Theory. 3 Hours.

This course focuses on a thorough examination of theories and models of behavior change and their applications in both research and implementation in various fields of health promotion and public health. Basic knowledge of research methodology and statistics is required. Course will be graded by letter. 3 hours.

HB 730. Health Communication Research. 3 Hours.

This course is designed to investigate the role of communication theories and methods in promoting public health and preventing disease. Both theoretical background in communication and behavioral science and practical communication/intervention development methods will be addressed.

HB 733. Health, Place, and Society. 3 Hours.

Health, Place, and Society examines social, economic, and political trends within the context of contemporary public health outcomes. Class participants will have a detailed understanding of how the social determinants of health interface with 1) housing policy, 2) employment, 3) education opportunities, 4) economic policy, and 5) social movements. Special emphasis is placed on how these factors follow a measurable pattern affecting intangible outcomes including access to health-enhancing knowledge and tangible outcomes including neighborhood quality and proximity to clean air and healthy foods. Class activities and projects will take a solution-based approach.

HB 736. Advanced Research Intervention Design. 3 Hours.

This course is intended to provide doctoral students with expert knowledge and application skills for designing a range of public health interventions to change behavioral outcomes in various populations. Emphasis will be placed on skill-building for designing relevant, state-of-the-art interventions tailored to unique population subgroups, and adapting existing evidence-based interventions for use with new populations or in new settings. Students will use two textbooks in this course that they will also use in Part 2 of this course (HB-737: Advanced Intervention Implementation and Evaluation). In addition, weekly readings of scientific articles will be assigned. This course uses lecture and seminar format; class time will be structured around lectures, in-class activities, and class discussions of both the lecture and reading materials. Students will complete writing assignments and develop a comprehensive research intervention development and implementation plan that they will later build on and evaluate in HB-737. This course is required for PhD students in Health Behavior.

Prerequisites: HB 724 [Min Grade: C]

HB 737. Advanced Intervention Implementation and Evaluation. 3 Hours.

This course is the second in a series of courses intended to teach doctoral students how to develop, implement, and evaluate theory-based, consumer-driven behavioral interventions. Students will learn how to assess whether interventions worked, build evidence for effective interventions, and adapt, implement, and disseminate interventions. Assignments will include developing a comprehensive evaluation plan for a mock grant application and describing how to adapt an existing evidence-based intervention to a particular content area, outcome target, setting, or population; students will be expected to present their work in class.

Prerequisites: HB 736 [Min Grade: C]

HB 741. Advanced Research Methods in the Behavioral Sciences. 3 Hours.

This course provides an in-depth treatment of the major research designs used in the behavioral sciences. Emphasis is given to the randomized controlled trial as it forms the cornerstone of causal inference in scientific inquiry; however, other designs intended to approximate a randomized trial will be reviewed. The course will also examine methods of collecting, analyzing, and interpreting data. Other topics include evaluating published research that used the methods reviewed in this course, writing research proposals and reports, and ethical considerations. Students must have taken HB 641: Research Methods in Behavioral Sciences or its equivalent as a prerequisite.

HB 742. Mediation and Moderation in Behavioral Science Research. 3 Hours.

This course is an elective course for doctoral students in public health and related fields, designed to provide an exposure to statistical mediation and moderation. Mediation and moderation are central in social and behavioral science research. Mediation explains and tests the underlying mechanisms by which the predictor variable affects the outcome variable, while moderation specifies under what conditions the predictor affects the outcome. Statistical techniques investigating mediation and moderation are among the most widely used data analysis techniques in a variety of disciplines. The primary goal of this course is to provide students with theoretical concepts of mediation and moderation and hands-on experience with relevant analytical techniques. **Prerequisite:** Students should have taken courses on multiple regression such as BST 611, BST or other equivalent courses. Course will be graded by letter. 3 hours.

HB 770. Doctoral Studies Seminar. 1-3 Hour.

The broad intent of the course is to review current issues relevant to the field of Health Promotion/Health Education, critically examine the relationship between scholarship, research, ethics and funding and reflect and discuss theoretical aspects of Health Promotion/Health Education.

HB 795. Seminar on Selected Health Behavior Topics. 1-3 Hour.

This course will be used as faculty design and craft course topics based on specific interests. These courses will be taught on a doctoral level.

HB 798. Doctoral-Level Directed Res. 1-9 Hour.

Independent study with guidance of senior public health faculty. Course will be graded as Pass/No Pass. 1 - 9 hours.

HB 799. Doctoral Dissertation Research. 1-9 Hour.

Research for dissertation under direction of dissertation committee. Course will be graded as Pass/No Pass. **Prerequisite:** Students must be admitted to candidacy in order to register for this class. 1 - 9 hours.

Prerequisites: GAC Z

HPO-Health Policy and Org Courses

HPO 600. Management and Policy in Public Health Systems and Services. 3 Hours.

The course focuses on the policy and organizational levels related to public health and the overall improvement of population health. This course content examines models of public health policy and the political context of policy making; the organization, financing, and delivery of public health systems and programs; and planning, management, and leadership concepts needed to improve the public's health.

HPO 601. Health Economics. 3 Hours.

Economics is a systematic way of thinking about the use of resources. Health economics applies the tools of economics to issues of the organization, delivery and financing of health care. The objectives of this course are to: (1) develop a basic understanding of economic concepts and their relevance to the health care sector, (2) develop familiarity with the system of health care financing and delivery arrangements in the U.S., (3) develop a framework for analyzing health management and policy options using economic tools and perspectives.

HPO 602. MCH Evidence-Based Strategies Seminar. 1 Hour.

Building on the focus of the MPH core curriculum, this course will focus on using evidence-based and informed strategies in addressing maternal and child health issues in both domestic and global settings. Topics will include basic research principles, stages of research development, and practical issues of reviewing the literature and preparing and presenting at professional meetings. Students will use evidence to develop a policy memo around an MCH issue.

HPO 603. Public Health Policy. 3 Hours.

This course examines the role of government in health policy in the United States. The class is intended to provide students with a greater awareness of current health policy issues and the analytical skills necessary to evaluate policy options. We will begin the semester with a discussion of the rationales for health policy, followed by a discussion of the policy process and policy analysis. The second part of the semester will be devoted to U.S. health system reform- namely expanding insurance coverage and improving the value of health spending.

HPO 604. Health Economics and Public Health Policy. 3 Hours.

Economics is the study of choices in a world of scarcity. This course applies basic microeconomic principles to the study of the US health care system and public health policy. The first goal of the course is to provide students with an understanding of the core economic concepts (scarcity, economic welfare and market failures) which shape health care and public health policy. Next, students will be introduced to two competing theories of government – public interest theory and the economic theory of regulation – which will serve as a foundation for thinking about the role of government in health policy. Finally, the remainder the semester will provide students with a comprehensive overview of the US health care system including public and private health insurance, hospitals, physicians, the pharmaceutical industry and current issues in health care reform.

HPO 605. Evidence-Based Foundations of Maternal and Child Health Systems. 3 Hours.

This course will focus primarily on public health problems and solutions of MCH populations in the United States. In addition to introductory information on specific health issues related to children and families, the evolution, status, and future performance of selected federal, state, and community programs will be analyzed. Coursework will be structured around the guiding principles of the State Title V MCH Block Grant: 1) Public Health Services Systems Model for MCH Populations, 2) Data Driven Programming and Performance Accountability (National Performance Measure Framework), 3) Family and Community Partnership, and 4) Health Equity. The course will include lectures, discussions, and other activities. Students will gain information on the history of MCH and public health, selected MCH issues for each stage of growth and development, the importance of family and communities in addressing MCH issues, and federal and state-specific programs and policies that address the needs of MCH populations.

HPO 606. Health and Development through the Life Course: Perspectives, Programs, and Policies. 3 Hours.

In developing, implementing, and evaluating effective maternal and child health programs and policies, it is critical to incorporate principles of development. Also critical is an understanding of how health trajectories of populations are influenced by broad social, economic, and environmental factors, a conceptual framework known as the life course perspective. This course covers 1) fundamental principles of human development; 2) how the central components of the life course perspective influence health and development; 3) how these stages of development are examined with research methodologies, using noted examples of databases and studies; and 4) how these concepts can be incorporated into MCH programs and policies.

HPO 607. Public Health Law. 3 Hours.

An introductory course in public health law designed for graduate students in public health. There are no prerequisites for this course. The purpose of the course is to introduce non-lawyers to the United States legal system and to the basic principles of law relevant to public health practitioners. It is intended to provide students with basic legal knowledge to assist them in communicating with attorneys about potential legal issues that may arise in formulating policy and exercising managerial authority. An overarching theme of the course is the tension between community interests and individual rights.

HPO 608. Reproductive Health. 3 Hours.

This course is intended to provide students with a foundation in reproductive health. It examines reproductive health issues, problems, policies, programs and services primarily in low-to-middle income countries.

HPO 609. Public Health Program Planning, Implementation and Evaluation. 3 Hours.

The purposes of this course is (1) to introduce the needs assessment and program planning, implementation, and evaluation processes specifically related to public health; and (2) to provide practical educational experiences to develop skills in applying rigorous methods and essential skills needed to conduct needs assessments and use the information gathered to plan, direct, and evaluate public health programs and impact public health policies. This course is required for all HPO students.

HPO 610. Introduction to Health Services and Outcomes Research. 3 Hours.

The purpose of this course is to provide students with knowledge about how to conduct health services and outcomes research. This course is designed to provide a practical, step-by-step overview through the entire health services and outcomes research process. This course is required for students seeking the Master of Science in Public Health (MSPH) degree with a Concentration in Outcomes Research in the Department of Health Policy and Organization. Other students interested in this topic are encouraged to register.

HPO 611. Statistical Analysis in Healthcare Settings. 3 Hours.

This introductory course in statistical analysis focuses on practical applications of commonly used statistical methodologies in healthcare settings to conduct health services and outcomes research. Topics covered include basic probability theory, distributions of random variables, fundamental statistical tests (e.g., t-test, analysis of variance, chi-square test), linear regression, and hypothesis testing. Emphasis is placed on utilizing STATA for data analysis, including the fundamentals of STATA programming.

HPO 612. Strategic Management in Health Programs. 3 Hours.

The overall goal of the course is to provide a framework for strategic management and an opportunity to think strategically through a case study. In addition, the course provides an opportunity to integrate the knowledge and experience students have acquired in previous courses and health care organizational settings into a broad theory of management.

HPO 613. Health Information in Technology and Policy. 3 Hours.

The overall purpose of this course is to familiarize students with current issues associated with health information technology and their impact on the U.S. healthcare system.

HPO 615. Finance for Health Professionals. 3 Hours.

The goal of this class is to teach the principles necessary for effective financial management in healthcare to individuals who are not experienced financial executives. The focus of the class is on tools and techniques that assist managers in creating information to support managerial decision making. The course uses the case method of instruction, case analysis, and lectures.

HPO 616. Introduction to Secondary Data. 3 Hours.

This course offers an introduction to the utilization of secondary data in health services research. Secondary data, including survey, census, and administrative claims datasets, are fundamental resources in understanding healthcare dynamics. Through this course, students will delve into the intricacies of these datasets and gain proficiency in their manipulation and analysis using SAS programming. The curriculum encompasses a comprehensive exploration of various data types, analytical techniques, and hands-on experience with publicly available datasets.

HPO 617. Dynamics of Public Health Projects. 3 Hours.

The course provides awareness of and an introduction to the Dynamic processes of Public Health Projects. The course contains modules that define Project Dynamics and provide an overview of critical timelines and tasks. These modules include defining scope, establishing milestones, sequencing tasks, exploring efficiency, controlling resources, and monitoring progress.

HPO 618. Management Concepts in Public Health Programs. 3 Hours.

Management Concepts in Public Health Programs is an overview of management concepts applied to public health agencies and programs. In recognition of public and private managements' responsibility for organizational success the course approaches management by examining recurring themes in management thought. Selected readings are provided for each class session that apply the concepts examined to the health care, not-for-profit, and/or public sectors. Some of the articles relate to domestic (USA) organizations while others relate to management in the international context.

HPO 620. Health Insurance and Managed Care. 3 Hours.

This course provides an overview of health insurance, health insurance regulation, state healthcare reform efforts, and the Affordable Care Act. It begins with a history of the development of health insurance and its theoretical basis. It then turns to the problems of moral hazard and adverse selection. The role of managed care and employer sponsored health insurance are discussed. Regulation of private insurance and the Medicare and Medicaid programs are also reviewed. A significant part of the course will focus on the impact of the Affordable Care Act on private health insurance markets.

HPO 621. Clinical Decision Making and Cost-Effectiveness Analysis. 3 Hours.

Difficult choices must be made in areas such as patient care, clinical guideline development, and public health policy. These decisions often must be made in the face of great uncertainty. Decision analysis aims to formally evaluate those decisions and to make decisions from an informed perspective regarding expected outcomes. Cost-effectiveness analysis applies decision analysis to circumstances where both costs and outcomes are important criteria for making choices. This course will give students an understanding of the methods and uses of decision analysis and cost-effectiveness analysis, but should have basic familiarity with probability and statistics. The course will provide a thorough grounding in the fundamentals of decision analysis and cost-effectiveness analysis, and will introduce several intermediate-to-advanced topics. This course is open to Master's and Doctoral students from the School of Medicine, Nursing, and Health Professions as well as the School of Public Health.
Prerequisites: BST 611 [Min Grade: C] and (BST 612 [Min Grade: C] or HPO 611 [Min Grade: C])

HPO 622. Design and Conduct of Cost-Effectiveness Research. 3 Hours.

The purpose of this course is to familiarize students with the design and implementation of cost-effectiveness and cost-benefit analysis.
Prerequisites: HPO 621 [Min Grade: C]

HPO 623. Pharmacoeconomics and Regulation. 3 Hours.

This course covers the principles of Pharmacoeconomics, defines the terminology used in pharmacoeconomic research, focuses on different types and measurement of pharmaceutical costs and outcomes, and investigates how they are analyzed in pharmacoeconomic techniques such as Cost-Benefit Analysis, Cost-Effective Analysis, Cost-Utility Analysis, Cost-Minimization Analysis, and Cost-Consequence Analysis. In addition, this course introduces the regulatory role of the FDA and some basic economic theories to understand the market of pharmaceutical products.

Prerequisites: BST 611 [Min Grade: C] and (BST 612 [Min Grade: C] or HPO 611 [Min Grade: C])

HPO 625. Advanced Leadership and Practice in MCH Part I – Introduction to Leadership. 1 Hour.

The purpose of the course is to introduce students to leadership skills that are important for designing, advocating for, and leading community, state, and regional programs. The course is required for all MPH and DrPH students in the HPO/Maternal and Child Health Policy and Leadership track and is open to students from other tracks and departments. It is offered as three, one-hour courses that provide theory, skills, and practice with each subsequent course building upon previous courses. The courses will include lectures, group discussions, individual projects, and service-learning field-based activities.

HPO 626. Adv Leadership and Practice in MCH Module II – Collaborative Leadership and Advocacy. 1 Hour.

This is the second of a three-course sequence designed to equip students with the knowledge and skills needed to provide leadership in the development and delivery of needed programs and policies to promote the health and well-being of MCH populations.

Prerequisites: HPO 625 [Min Grade: C](Can be taken Concurrently)

HPO 627. ADV Leadership and Practice in MCH Module III – Into the Streets: Lead/Field Experience. 1 Hour.

The purpose of this course sequence is to provide students with the leadership skills necessary to work effectively at a community, state or regional level in the capacity of designing and advocating for programs and policies necessary to promote the health of women, children and families.

Prerequisites: HPO 625 [Min Grade: C] and HPO 626 [Min Grade: C]

HPO 628. Qualitative and Mixed Methods Research in Public Health. 3 Hours.

The purpose of this course is 1) to familiarize students with basic qualitative research methods used by public health researchers and practitioners, with a specific focus on their use in the health sciences; 2) to provide practical educational experiences to develop skills in the planning of qualitative studies and in the collection and analysis of qualitative data; and 3) to introduce students to the concept of mixed methods research and applications in public health. This course is designed to familiarize students who have little or no experience in conducting qualitative research with the perspectives, methods, and techniques of a vast tradition of research. The course will cover some of the methods of data collection used in the conduct of qualitative inquiries, the analysis of textual data, the write-up of findings from qualitative studies, and the development of a qualitative research proposals and reports.

HPO 630. Health and Development: Life Course Approach. 2 Hours.

In developing, implementing, and evaluating effective maternal and child health programs and policies, it is critical to incorporate principles of development. Also critical is an understanding of how health trajectories of populations are influenced by broad social, economic, and environmental factors, a conceptual framework known as the life course perspective. This course covers 1) fundamental principles of human development; 2) how the central components of the life course perspective influence health and development; 3) how these stages of development are examined with research methodologies, using noted examples of data bases and studies; and 4) how these concepts can be incorporated into MCH programs and policies.

HPO 631. Public Health Demography. 3 Hours.

Demography (the study of population) has become more important across a range of academic disciplines. There is a growing call on demographers outside academia, such as for policy-making, health care planning and analysis, or business administration. Demographic changes play a critical, though often poorly understood role in influencing the social, economic, and health fabric of our lives. This course introduces the core concepts and methods used in demographic analysis. It also provides a basic understanding of population dynamics and its health and socio-economic implications. Students will gain a firm foundation in how to measure fertility, mortality and migration; how to analyze population change and project population growth; and how to interpret demographic trends, their determinants and consequences.

HPO 632. Leadership in Maternal and Child Health. 3 Hours.

The health of women, children, youth, and families is influenced by many factors, including health practices, availability of public health and health care resources, and the social determinants of health. To promote health and positively affect these factors at the individual, community, and policy levels, specific knowledge, skills, personal characteristics, and values are needed. The purpose of the course is to engage students in the development of their own leadership skills and the application of these skills in the design, delivery, and evaluation of MCH programs and policies.

HPO 633. Policy and Women's Health. 3 Hours.

Across the lifespan, women face unique challenges related to their own health and wellbeing and are exposed to other historical and social influences that also affect their families and society. The purpose of this course is to examine women's health from multidisciplinary and multidimensional perspectives, with specific focus on public health policies, programs, and prevention strategies that address women's reproductive health and broader health and well-being within a life course framework that integrates biological determinants of health and the social, cultural, and economic contexts of women's lives.

HPO 634. Health Care Innovation. 3 Hours.

This course focuses on sustainable and socially responsible health care innovations. Students will be introduced to the realities of problem identification and will provide a how-to framework and case studies of healthcare ventures.

HPO 635. Policy and Child and Adolescent Health. 3 Hours.

Children and adolescents, including children and youth with special health care needs, interact with and are touched by multiple public and private systems as they progress through their early lifespans. These include health care, educational settings, social programs, childcare, and public health. They are also part of family/caregiver units and are influenced by that environment and the experiences of those family members and caregivers. The safety, security, health, resiliency, and life trajectories for children and adolescents are impacted in multiple ways – positive, negative, and somewhere in-between – through their own experiences, as well as those of their families/caregivers and the environments around them. It is for this reason that many approaches to health and wellness for this population are two-generational, meaning that they are focused on the child and family, or are directed towards the other adults who care for them in external systems such as schools, childcare settings, and health provider offices. Given this uniqueness, policy and program influences are often realized through the lens of caregivers and factors that influence them (social determinants of health and well-being, life course experiences).

HPO 636. Public Health and Healthcare Delivery Systems. 1 Hour.

The public health system is comprised of federal, state, and local organizations and agencies. These organizations work with other entities, public and private, such as health care systems, non-profits, and pharmaceutical companies to address and combat public health issues. In this course, students will examine the functions of governmental public health, systems collaboration between public health and health care delivery, and the role of government in public health. Students will apply previous knowledge of systems thinking to examine the contributions and challenges of the public health and health care delivery related to past and current public health events. By the end of this course, students will gain skills in distinguishing organizations and components of public health and health care delivery systems.

HPO 637. Design and Management of Complex Public Health Systems. 1 Hour.

Designing solutions or responses to complex public health issues require management and leadership skills to navigate within and across multiple sectors. The purpose of this course is to equip students with management and leadership techniques to engage appropriate partners in the design of a solution to a public health issue. Building on work in HPO 636, students will engage in case studies that provide insight into how public health leaders historically approached complex, multi-factorial issues that required a collaborative and coordinated response across multiple sectors. The culminating project will be developing a plan to address a public health issue that incorporates multiple agencies. Students also will identify associated leadership and management skills needed for this response.

HPO 638. Current Issues in Public Health Policy. 1 Hour.

With global public health events such as the Ebola outbreak and more recent COVID-19 pandemic, public health students' benefit from understanding how social and health policy influence health; physical, mental, and social well-being. As the political landscape changes, domestically and globally, public health students should critically analyze the effect of policy on determinants that impact health outcomes among populations. Policy decisions, both locally and nationally, can shape public health practice and organization dynamics, progress the achievement of health equity, increase or decrease health disparities, and more. This course will allow students to consider current public health issues and evaluate how policies or the lack thereof influence population health. This course is an in-depth opportunity for students to explore controversial public health topics and assess the effectiveness of policy implementation. By the end of this course, students will have developed the skills of analyzing and evaluating public health policy. Prerequisite: HPO 604 (Health Economics & Health Policy) is recommended.

HPO 640. Disaster and Emergency Management. 3 Hours.

The course will provide a concerted look into the realm of disaster and emergency management. Discussions in this course will concentrate on how disaster and emergency management has changed since 9/11 including new legislation and governmental structures. The course will culminate with a look at the roles and responsibilities of the public health system in preparing for and responding to both natural and man-initiated disasters. This course is intended for advanced MPH or doctoral students with an interest in preparedness policy, emergency management, or public health preparedness.

HPO 641. Public Health Preparedness and Response. 3 Hours.

Public health professionals must be prepared to respond to a range of emergencies before they strike. The purpose of this course is to prepare students by introducing sentinel public health preparedness policies, systems, frameworks and tools that guide emergency planning, response, and recovery operations and evaluation. This course will provide students with an overview of public health emergency preparedness and response (PHEPR) and hospital preparedness program (HPP) as well as other key public health preparedness funding initiatives. During this course we will explore policy and policy making in the U.S., learn how the political context can influence policy priorities, discuss sentinel public health preparedness policies and public health preparedness programs, and a framework for approaching emergency planning and evaluation.

HPO 642. Preparedness and Agriculture. 3 Hours.

This course presents the potential effects of an animal disease outbreak, whether natural, accidental or deliberate, on the affected communities. Topics covering the prevention and diagnosis of and the response to an animal disease outbreak will be presented. Examples of the interaction of public health with other disciplines will be provided. This course is designed for MPH students with an interest in preparedness policy, emergency management, or public health preparedness.

HPO 643. Emergency Preparedness Exercises, Evaluation and Communication. 3 Hours.

This course will provide participants with an understanding of the psychological processes that occur during crises, how those processes impact human functioning, and how communication plays a critical role in the psychological outcomes of crisis situations.

HPO 645. Comparative Health Systems and Policy. 3 Hours.

This course provides a comprehensive survey of a number of healthcare systems from low-, middle-, and high-income countries, situating the U.S. and other national experiences in a comparative cross-national frame. The course provides frameworks for students to analyze in diverse settings the different ways that health policy is developed and implemented, given the resources, capacities, and systems of each country. The course will also examine the ways in which health care is organized and delivered, along with underlying global public health principles and impacts. By comparing health systems and policies, globally, students will reflect on how a country's social-historical context and values, geography, polity and economy influence the way that health care is provided and its relationship with population health, as well as how health policies influence the quality of life.

HPO 670. Social and Ethical Issues in Public Health. 3 Hours.

This class examines ethical issues related to public health research and practice, and explores the social issues that complicate ethical decision-making. There are no pre-requisites. This class is open to all students with graduate standing.

HPO 672. Perinatal Health: Issues, Data, and Policies. 3 Hours.

The purpose of this course is to provide students with knowledge related to perinatal health issues and policies. In addition, the course will allow students to gain basic skills in analysis of population-based data sets using SAS. This course at the 600 and 700 level is an elective for students seeking the Master of Public Health (MPH) degree and the Doctor of Public Health (DrPH). Other students interested in this area are encouraged to register. An introductory SAS course is recommended but not required.

HPO 677. Patient-Based Outcomes Measurement. 3 Hours.

This course will provide an in-depth overview of the concepts, methods, and instruments used to evaluate health from the perspective of the individual. The overall objective of this course is to provide a detailed examination of patient-based/centered outcomes measurement in the context of health care delivery systems and health care policy.

Prerequisites: BST 611 [Min Grade: C](Can be taken Concurrently) and (BST 612 [Min Grade: C] or HPO 611 [Min Grade: C])

HPO 687. Empirical Methods for Health Research. 3 Hours.

The course aims to provide a thorough treatment of simple and multivariate regression models, simple binary dependent variable models, simple panel data models, and instrumental variables methods. Particular emphasis is placed on methods used to address omitted variable bias, such as difference-in-difference. The course is structured to provide students with ample opportunity to acquire hands-on experience in working with data by performing empirical analysis using the statistical software STATA.

Prerequisites: BST 611 [Min Grade: C](Can be taken Concurrently) and (BST 612 [Min Grade: C] or HPO 611 [Min Grade: C])

HPO 689. HPO Integrative Learning Experience. 2 Hours.

The HPO ILE or capstone course represents a culminating experience that allows students to demonstrate synthesis of MPH foundational and concentration competencies. The HPO ILE, using a case-based educational methodology, will allow students to work in teams to create a comprehensive strategic plan for a public health program while developing a program plans and evaluation plans to address a specific health issues. Students will also address the policy implications associated with the health issue through a policy analysis. Students in the HPO-MCH concentration will focus specifically on an MCH-relevant issue in the ILE. MPH students should complete the ILE in the final term of the MPH program, after all core courses and the MPH internship experience are completed.

Prerequisites: PUH 688 [Min Grade: C]

HPO 691. Policy Analysis: Modeling and Simulation. 3 Hours.

This course shows how models are built and used for public policy making and clinical decision analysis. The goal is for you to develop basic skills with building various types of models. Models include the optimization method of linear programming, spreadsheets with various types of randomness, bootstrapping data to estimate how much a model's results may vary, discrete event modeling, queuing, Markov models, and an introduction to some advanced models using Netlogo and Python programming.

Prerequisites: BST 611 [Min Grade: C] and (BST 612 [Min Grade: C] or HPO 611 [Min Grade: C])

HPO 692. Health Equity and Inclusion in Public Health Programs and Policies. 3 Hours.

The aim of this course is to engage students in critical thinking about the current paradigms for health disparities and equity research and public health practice and policies. As a part of this process, students will be challenged to think about the social, political, and economic determinants of health disparities for diverse health care consumers, to identify substantive trends and gaps in the health disparities literature, and to develop an innovative research or policy oriented strategy for reducing health disparities. We will discuss health and health care disparities according to race/ethnicity, sex, orientation, health status, and geographic location.

HPO 695. Seminar in Health Policy and Organization. 1-3 Hour.

Factors currently influencing finance and administration of public and private health programs; availability, accessibility, and utilization by selected population groups.

HPO 698. Master's Level Directed Research Health Policy and Organization. 1-9 Hour.

Independent study with guidance of appropriate faculty.

HPO 699. Master's Level Project Research Health Policy and Organization. 1-9 Hour.

Research for project under direction of appropriate faculty and/or research project committee.

HPO 701. Health Economics. 3 Hours.

Economics is a systematic way of thinking about the use of resources. Health economics applies the tools of economics to issues of the organization, delivery and financing of health care. The objectives of this course are to: (1) develop a basic understanding of economic concepts and their relevance to the health care sector, (2) develop familiarity with the system of health care financing and delivery arrangements in the U.S., (3) develop a framework for analyzing health management and policy options using economic tools and perspectives.

HPO 703. Public Health Policy - Doctoral Level. 3 Hours.

This course examines the role of government in health policy in the United States. The class is intended to provide students with a greater awareness of current health policy issues and the analytical skills necessary to evaluate policy options. We will begin the semester with a discussion of the rationales for health policy, followed by a discussion of the policy process and policy analysis. The second part of the semester will be devoted to U.S. health system reform- namely expanding insurance coverage and improving the value of health spending.

HPO 704. Health Economics and Public Health Policy. 3 Hours.

Economics is the study of choices in a world of scarcity. This course applies basic microeconomic principles to the study of the US health care system and public health policy. The first goal of the course is to provide students with an understanding of the core economic concepts (scarcity, economic welfare and market failures) which shape health care and public health policy. Next, students will be introduced to two competing theories of government – public interest theory and the economic theory of regulation – which will serve as a foundation for thinking about the role of government in health policy. Finally, the remainder the semester will provide students with a comprehensive overview of the US health care system including public and private health insurance, hospitals, physicians, the pharmaceutical industry and current issues in health care reform. Ideally, students will come away from the course with a better understanding of the role of economics in the US health care system, and an improved ability to analyze the motivations and consequences of government intervention in markets.

HPO 706. Strategic Management Theory/Research. 3 Hours.

The vision for the course is to develop highly competitive strategic management major graduates at that doctoral level. Strategic Management Theory and Research is to provide a forum for the introduction of the concepts and issues of strategic management in order to facilitate their understanding and communications.

HPO 708. Reproductive Health. 3 Hours.

This course is intended to provide students with a foundation in reproductive health. It examines reproductive health issues, problems, policies, programs and services, primarily in low-to-middle income countries.

HPO 714. Life Course Seminar. 3 Hours.

The purpose of this course is to expand knowledge and research skills around MCH life course issues. As guided by faculty, students will review and critique the literature in given areas around life course science and specific life span issues. Students will work with the library liaison to conduct extensive literature reviews and move toward writing a manuscript for submission to a peer-reviewed journal. It will serve as a foundation for skills needed in other courses as well as foundational knowledge related to maternal and child health science. The course is required for all HPO-MCH doctoral students. Other doctoral or higher level Masters' students interested in a research path may register with the approval of the instructor. Prerequisites: Ideally, students will have taken all course work prior to taking this course. However, the DrPH director and course instructors may make exceptions.

HPO 715. Finance for Health Professionals. 3 Hours.

Financial management of public health care organizations. Emphasis on time value on money, capital raising methods, cost of capital, capital budgeting methods and working capital policy. Problem-solving orientation with applications to public health issues.

HPO 716. Advanced Leadership and Practice Seminar. 3 Hours.

This seminar provides a foundation for all doctoral students in the concepts and application of leadership and management in public health practice. Part I of the course will explore and discuss the nature and processes of doctoral education and academic teaching, scholarship, service, and other duties related to a traditional academic research or scholarly practice setting. Part II of the course allows doctoral students to enhance their leadership skills, through personal development activities as well as through interaction with public health leaders. In Part III, students will gain a deeper understanding of how research is applied in public health practice through the completion an interdisciplinary project that draws upon management and organizational skills. The course will be co-led by faculty members with across the department. Prerequisites: Ideally, students will have taken all course work prior to taking this course. However, the DrPH director and course instructors may make exceptions.

HPO 717. Seminar in Public Health Policy. 3 Hours.

The purpose of this course is to enhance doctoral students' understanding of public health policy, including the policy making process and the role of various components of the public health system in the design and implementation of policy. The course will focus on the linkages between public health research and practice. The course will engage students in the discussion of contemporary public health issues and will focus heavily on the critical task of assessing these issues from multiple stakeholder and ideological perspectives. The course will also focus heavily on writing and the tools necessary for policy development, advocacy and implementation.

HPO 718. Management Concepts in Public Health Programs. 3 Hours.

Management Concepts in Public Health Programs is an overview of management concepts applied to public health agencies and programs. In recognition of public and private managements' responsibility for organizational success the course approaches management by examining recurring themes in management thought. Selected readings are provided for each class session that apply the concepts examined to the health care, not-for-profit, and/or public sectors.

HPO 720. Health Insurance and Managed Care. 3 Hours.

This course provides an overview of health insurance, health insurance regulation, state healthcare reform efforts, and the Affordable Care Act. It begins with a history of the development of health insurance and its theoretical basis. It then turns to the problems of moral hazard and adverse selection. The role of managed care and employer sponsored health insurance are discussed. Regulation of private insurance and the Medicare and Medicaid programs are also reviewed. A significant part of the course will focus on the impact of the Affordable Care Act on private health insurance markets.

HPO 721. Clinical Decision Making and Cost Effectiveness Analysis. 3 Hours.

Difficult choices must be made in areas such as patient care, clinical guideline development, and public health policy. These decisions often must be made in the face of great uncertainty. Decision analysis aims to formally evaluate those decisions and to make decisions from an informed perspective regarding expected outcomes. Cost-effectiveness analysis applies decision analysis to circumstances where both costs and outcomes are important criteria for making choices. This course will give students an understanding of the methods and uses of decision analysis and cost-effectiveness analysis, but should have basic familiarity with probability and statistics. The course will provide a thorough grounding in the fundamentals of decision analysis and cost-effectiveness analysis, and will introduce several intermediate-to-advanced topics. This course is open to Master's and Doctoral students from the School of Medicine, Nursing, and Health Professions as well as the School of Public Health. **Prerequisites:** BST 611 [Min Grade: C] and BST 612 [Min Grade: C]

HPO 722. Design and Conduct of Cost-Effectiveness Research. 3 Hours.

The objective of this course is to familiarize students with the design and implementation of cost-effectiveness and cost-benefit analysis.

Prerequisites: HPO 721 [Min Grade: C]

HPO 723. Management of Complex Health Organizations. 3 Hours.

Complexity as related to management of health organizations. Academic health centers as models of complex organization. Incentive systems, organizational politics, and ownership and control within context of high complex health organizations.

HPO 728. Qualitative and Mixed Methods Research in Public Health. 3 Hours.

The purpose of this course is 1) to familiarize students with basic qualitative research methods used by public health researchers and practitioners, with a specific focus on their use in the health sciences; 2) to provide practical educational experiences to develop skills in the planning of qualitative studies and in the collection and analysis of qualitative data; and 3) to introduce students to the concept of mixed methods research and applications in public health. This course is designed to familiarize students who have little or no experience in conducting qualitative research with the perspectives, methods, and techniques of a vast tradition of research. The course will cover some of the methods of data collection used in the conduct of qualitative inquiries, the analysis of textual data, the write-up of findings from qualitative studies, and the development of a qualitative research proposals and reports.

HPO 730. Health and Development: Life Course Approach. 2 Hours.

In developing, implementing, and evaluating effective maternal and child health programs and policies, it is critical to incorporate principles of development. Also critical is an understanding of how health trajectories of populations are influenced by broad social, economic, and environmental factors, a conceptual framework known as the life course perspective. This course covers 1) fundamental principles of human development; 2) how the central components of the life course perspective influence health and development; 3) how these stages of development are examined with research methodologies, using noted examples of data bases and studies; and 4) how these concepts can be incorporated into MCH programs and policies.

HPO 740. Disaster and Emergency Management. 3 Hours.

The course will provide a concerted look into the realm of disaster and emergency management and public health emergency preparedness. Discussions in this course will concentrate on how emergency management and public health emergency preparedness has evolved since the beginning of the millennium. Pertinent background information related to federal, state, and local activities to plan, prepare for, and mitigate potential threats will be studied along with activities around response and recovery. Students will learn how emergency operations are organized and be introduced to the National Response Framework (NRF) and Incident Command System (ICS). Included in this course will be an introduction to emergency preparedness competencies; risk assessment and hazard vulnerability analysis; and emergency response planning. The course will culminate with a look at the roles and responsibilities of the public health system in preparing for and responding to both natural and man-initiated disasters. Students will be provided an opportunity to develop written, graphic, and oral presentation skills. These skills will be developed in the context of several assignments spread throughout the semester. This course is intended for doctoral students with an interest in public health leadership, emergency management, or public health preparedness.

HPO 741. Public Health Preparedness and Response. 3 Hours.

Public health professionals must be prepared to respond to a range of emergencies before they strike. The purpose of this course is to prepare students by introducing sentinel public health preparedness policies, systems, frameworks and tools that guide emergency planning, response, and recovery operations and evaluation. This course will provide students with an overview of public health emergency preparedness and response (PHEPR) and hospital preparedness program (HPP) as well as other key public health preparedness funding initiatives. During this course we will explore policy and policy making in the U.S., learn how the political context can influence policy priorities, discuss sentinel public health preparedness policies and public health preparedness programs, and a framework for approaching emergency planning and evaluation.

HPO 742. Preparedness and Agriculture. 3 Hours.

This course presents the potential effects of an animal disease outbreak, whether natural, accidental or deliberate, on the affected communities. Topics covering the prevention and diagnosis of and the response to an animal disease outbreak will be presented. Examples of the interaction of public health with other disciplines will be provided. This course is designed for MPH students with an interest in preparedness policy, emergency management, or public health preparedness.

HPO 743. Emergency Preparedness Exercise, Evaluation & Communication. 3 Hours.

Testing emergency response plans is necessary to ensure their feasibility and validity. Exercises are a key component of national and local preparedness as they provide the opportunity to shape planning, assess and validate capabilities, and identify and address areas for improvement. Exercises are the standard emergency management practice used to train for, assess, practice, and improve response performance. In this course, students will be introduced to and utilize the guiding principles set forth in the Homeland Security Exercise and Evaluation Program (HSEEP). The HSEEP framework describes key steps of exercise program management: exercise design, development, implementation, evaluation, and improvement planning. During this course students will learn how translate preparedness priorities into exercise objectives and align them to capabilities for evaluation during the exercise. Students will develop exercise evaluation instruments that will be used to document strengths, areas for improvement, capability performance, and corrective actions. An After-Action Report/Improvement Plan (AAR/IP) will be compiled that will guide organizational improvements to build and maintain readiness.

HPO 744. Crisis and Risk Communication. 3 Hours.

This course is about anticipating and identifying problems and issues and managing communication during times of public health crisis and uncertainty. It will provide an opportunity for students to establish or advance their understanding of communication methods. Most importantly, it will teach students to master the "art" of communication effectively with a variety of audiences and through the strategic use of various communication tools, particularly when stakes are high and impact public health. This course will examine current and past public health events and provide an opportunity to discuss and analyze the communication strategies used in these scenarios.

HPO 746. Public Health Preparedness Research Methods. 3 Hours.

Successful public health professionals should be able to demonstrate knowledge and skills to critically review published research, conduct original practice-based research, and translate research to action. This course will provide an opportunity for students to advance their understanding of research in public health preparedness and leadership through critical exploration of research language, ethics, and approaches. Students will learn concepts and skills required for research design, implementation, analysis, and reporting with the aim of strengthening their ability to add to the evidence base of preparedness and lead evidence-based practice. Students will ultimately select a study design that is best suited to address their problem of interest. This course is required for all students in the Health Policy and Organization DrPH Preparedness Leadership concentration.

HPO 772. Perinatal Health: Issues, Data, and Policies. 3 Hours.

The purpose of this course is to provide students with knowledge related to perinatal health issues and policies. In addition, the course will allow students to gain basic skills in analysis of population-based data sets using SAS. This course at the 600 and 700 level is an elective for students seeking the Master of Public Health (MPH) degree and the Doctor of Public Health (DrPH). Other students interested in this area are encouraged to register. An introductory SAS course is recommended but not required.

HPO 777. Patient-Based Outcomes Measurement. 3 Hours.

This course will provide an in-depth overview of the concepts, methods, and instruments used to evaluate health from the perspective of the individual. The overall objective of this course is to provide a detailed examination of patient-based/centered outcomes measurement in the context of health care delivery systems and health care policy.

HPO 781. Research Methods and Study Design. 3 Hours.

This course examines empirical methods utilized in health economics, policy and management research. The course supplements the material covered in HPO 787, with a focus on the application of econometric methods to contemporary topics in health research. The course begins with an overview of experimental and non-experimental research and the critical distinction between associative and causal relationships. The remainder of the course will focus on the difficulty of identifying causal relationships in non-experimental contexts, and the methods that are commonly used to overcome these challenges. At the end of the semester, students should come away with an improved grasp of the interdisciplinary language of health research and a deeper appreciation of the importance of research design in quantitative work.

HPO 787. Empirical Methods for Health Research. 3 Hours.

The objectives of the course are to provide thorough treatment of simple and multivariate regression models, simple binary dependent variable models, instrumental variables estimators, sample selection and two-part models, and simple panel data models. Course provides students with an opportunity to acquire hands-on software. This course is designed for students who have had limited experience with regression analysis but a working knowledge of simple statistics, probability distributions, and basic calculus. Students must have upper level undergraduate or graduate coursework in statistics and probability; basic calculus. Prerequisites: Senior Undergraduate or Graduate Course in Statistics & Probability Distributions.

HPO 791. Policy Analysis: Modeling & Simulation. 3 Hours.

This course shows how models are built and used for public policy making and clinical decision analysis. The goal is for you to develop basic skills with building various types of models. Models include the optimization method of linear programming, spreadsheets with various types of randomness, bootstrapping data to estimate how much a model's results may vary, discrete event modeling, queuing, Markov models, and an introduction to some advanced models using Netlogo and Python programming.

Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C]

HPO 792. Health Equity and Inclusion in Public Health Programs and Policies. 3 Hours.

The aim of this course is to engage students in critical thinking about the current paradigms for health disparities and equity research and public health practice and policies. As a part of this process, students will be challenged to think about the social, political, and economic determinants of health disparities for diverse health care consumers, to identify substantive trends and gaps in the health disparities literature, and to develop an innovative research or policy oriented strategy for reducing health disparities. We will discuss health and health care disparities according to race/ethnicity, sex, orientation, health status, and geographic location.

HPO 793. DrPH Practicum. 3-6 Hours.

All DrPH students will complete an applied practice experience (Practicum) in which the student will complete at least one project that is meaningful for a public health organization and to advanced public health practice. In addition to self-reflection on the applied practice experience, the student will produce a final product that addresses the competencies listed below. This may take the form of a written report, portfolio, or other deliverable as determined by the student, advisor, and/or Practicum preceptor, according to departmental guidelines.

HPO 795. Directed Readings. 1-6 Hour.

The purpose of this course is to assist students in preparing literature reviews, manuscripts, or to complete other activities as deemed appropriate by the faculty member. Final objectives will be based upon the work between the student and advisor.

HPO 796. Doctoral Seminar in Health Policy and Organization. 1 Hour.

Doctoral students will be introduced to advanced topics in public health policy and practice, health services research methods and management research. In addition, topics directly related to doctoral studies (article critiques, literature reviews, manuscript preparation, dissertation protocol development, etc.) will be discussed.

HPO 797. Directed Readings for DrPH Comprehensive Examination. 3 Hours.

The Directed Readings for DrPH Comprehensive Examination in HPO is required for HPO DrPH students as part of their training. The primary aim of this course is to assist students in preparing for their comprehensive exams. Doctoral students may register for this course in the term in which they prepare for and take their comprehensive examination.

HPO 798. Doctoral Level Directed Research Health Policy and Organization. 3-9 Hours.

The purpose of this course is for students to develop dissertation research protocols that will be presented to their dissertation committee for final approval. Final objectives will be based upon the work between the student and advisor.

HPO 799. Dissertation Research HPO. 1-9 Hour.

Research for dissertation under direction of dissertation committee. Must be advanced to candidacy.

Prerequisites: GAC Z

PUH-Public Health Courses

PUH 600. Overview of Public Health. 0-3 Hours.

The Overview of Public Health (OPH) course is intended to provide professional degree students in the School of Public Health (SOPH) a broad overview of the core areas of public health. This course was designed to address the foundational public health learning objectives. This course will introduce students to and facilitate their understanding of how public health relates to their discipline. As well as, how all disciplines relate to achieve the goals of public health.

PUH 601. This is Public Health. 1 Hour.

Understand the history, philosophy, and values of public health, including the structure and functions of organizing governmental public health.

PUH 602. Community Assessment. 3 Hours.

Becoming aware of current conditions through a community assessment is the first step to evidence-based public health. This course will introduce students to the various community assessments methods used to identify and prioritize community needs, concerns, and preferences, as well as to identify community assets, and inform the development of public health interventions. Students will be able to utilize a breadth of data sources commonly used to assess population health needs, assets and capacities that affect community health. Topics to be covered include the introduction to planning models, stakeholder identification, coalition building, quantitative data sources, quantitative and qualitative data collection methods, analysis of qualitative data, interpreting data, and framing community issues.

Prerequisites: PUH 601 [Min Grade: C](Can be taken Concurrently)

PUH 603. Quantitative Methods in Public Health. 3 Hours.

To appropriately address the needs of communities, we must be able to prioritize their leading health concerns. Quantitative methods allow us to examine the associations between various social, ecological, biological, and environmental factors and health outcomes, to identify populations at elevated risk for poor health outcomes, and to assess the effect of programs or policies implanted to improve health outcomes. This course introduces students to the broad range of epidemiologic and biostatistical methods used in public health, with particular attention to how quantitative results can be communicated clearly to scientific and non-scientific audiences.

Prerequisites: PUH 601 [Min Grade: C](Can be taken Concurrently)

PUH 604. Programs and Policies. 3 Hours.

This course covers how to collect and apply evidence of community needs in order to identify and prioritize programs and policies for implementation. Public health programs and policies should improve the quality of life of persons and communities through the reduction or elimination in the incidence, prevalence, and rates of disease and disability as well as the promotion of human flourishing via the preservation and improvement of community health. In doing so, programs and policies should strive to improve conditions and access to resources for healthy living for all persons. Given the breadth and complexity of factors that influence health, public health has developed a rich toolkit to guide our efforts to improve community health. This course reviews key elements of that toolkit, including (1) methods and theoretical tools used to collaboratively and inclusively determine community priorities for promoting health; (2) planning models and theories used to guide the development of public health programs and influence health policy; and (3) strategies to frame public health issues with the ultimate goal of informing and successfully advocating for public health policies. From prioritizing goals and objectives to planning for successful implementation, this course explores the multiple dimensions of the successful adoption of public health policies and programs.

Prerequisites: PUH 601 [Min Grade: C] and PUH 602 [Min Grade: C] and PUH 603 [Min Grade: C]

PUH 605. Public Health Management and Evaluation. 3 Hours.

Applying effective management methods and principles and evaluating the impact of programs and policies to determine community cost and impact are essential components of evidence-based public health. This course includes an exploration of key management, governance, and leadership principles necessary for the successful implementation and evaluation of public health programs and policies. Managers and organizations often operate with limited resources, thus learning how to be good stewards of financial and human resources is essential. This requires the ability to develop budgets and evaluation plans, operate within and foster interprofessional collaboration, manage conflict, and ethical decision-making. A cornerstone of good management is the continuous and rigorous determination of the consequences of one's choices and actions; did the program or policy have the desired effect? Did it have unintended consequences? This course introduces students to methods of process, formative, summative, and outcome evaluation, including experimental designs and participatory models of evaluation.

Prerequisites: PUH 601 [Min Grade: C] and PUH 602 [Min Grade: C] and PUH 603 [Min Grade: C]

PUH 606. Leadership for Evidence-Based Public Health. 1 Hour.

Developing competencies to provide effective leadership for evidence-based public health. Effective leadership for evidence-based public health requires competencies in advocacy, negotiation, communication, and collaboration, all within a "systems thinking" framework. This course includes an exploration of theoretical constructs and concepts in leadership, balanced with a series of case studies, presentations, and interviews with leaders that provide examples of the application of these leadership competencies in public health practice. Students will learn to advocate for programs and policies, apply negotiation skills, communicate using appropriate strategies for specific audiences, collaborate through interprofessional learning experiences, and apply systems thinking to a public health issue. Students will be assessed through papers, group projects, and participation.

Prerequisites: PUH 601 [Min Grade: C] and PUH 602 [Min Grade: C] and PUH 603 [Min Grade: C] and PUH 604 [Min Grade: C](Can be taken Concurrently) and PUH 605 [Min Grade: C](Can be taken Concurrently)

PUH 610. Population Health. 3 Hours.

This course introduces you to the field of population health. It is intended for students and those receiving training or already working in different aspects of health and social care who wish to improve their understanding of this interdisciplinary field. Population health is a relatively new term with many meanings, but at its core, it has three central concerns. These include assessing the range of health outcomes of population groups; understanding the multiple determinants of the levels and distributions of health within and across populations; and addressing those factors through policies and practices to improve health and ameliorate health disparities.

PUH 627. Writing & Reviewing Research for MPH Candidates. 3 Hours.

PUH 627 is a course that meets for ten three-hour sessions over the course of 10 weeks. Class time will be filled with discussion, group activities, tasks, writing, peer review, and presentations. By the end of this 10-week course, PUH 627 student writers will demonstrate a working grasp of academic research writing best practices, including ethics for authors, and gain knowledge and confidence as writers after completing weekly non-graded reading/writing activities, 3 rigorous graded writing assignments, and a final (a research proposal presentation) as measured by: 1) an average of grades on writing rubrics and 2) instructor evaluation.

PUH 685. Training in Public Health Teaching. 3 Hours.

Acquire skills for teaching in higher education, including syllabus design, communication skills for the classroom and office hours, creating assignments and rubrics, preparing and giving lectures, preparing nondidactic content, and effective grading. **Prerequisites:** Must have completed the course that you will be the TA, or similar course, in a prior semester with a grade of B or higher. Have an overall GPA of 3.0 or higher (be a student in good standing with the UAB Graduate School). Receive an invitation from the applicable faculty member to register for this course.

PUH 688. Public Health Internship. 3 Hours.

All students in the MPH degree program are required to complete the three (3) credit hour public health internship (PUH 688) as a part of their curriculum. The internship provides an opportunity for each student to work in a public health setting with responsibilities similar to those in an entry-level MPH position. The internship cumulates with the submission of at least two work products developed by the student that benefit the agency/organization and allows the student to successfully demonstrate competency attainment in five (5) of the Foundational MPH competencies. Students should have completed the core classes before registering for an internship.

Prerequisites: PUH 601 [Min Grade: C] and PUH 602 [Min Grade: C] and PUH 603 [Min Grade: C] and PUH 604 [Min Grade: C] and PUH 605 [Min Grade: C] and PUH 606 [Min Grade: C]

PUH 690. Special Topics in Public Health. 1-6 Hour.

This is a general course that may be used for special topic lectures or directed readings.

PUH 696. Exploring Population Health. 6 Hours.

Public health is what we do together as a society to ensure the conditions in which everyone can be healthy. This course will provide students an opportunity to learn about both historical and contemporary public health issues, their effects on population health, and how public health systems are working to solve the health issues affecting our communities today. This course will focus on the Southeast United States. Students will tour historically significant sites, visit communities and community-based organizations, attend featured presentations around both contemporary and historical public health issues, as well as visit local, state, tribal and federal public health agencies to learn about their structure, programs, service delivery models, and approaches to addressing issues of public health. The sum of this experience will illustrate the interdisciplinary nature of public health practice and the need to add attention to the social determinants of health – the conditions in the social, physical, and economic environment in which people are born, live, work and age – in order to achieve health equity. Travel is required for this course.

PUH 703. Public Health Grant Writing. 3 Hours.

This course will explore approaches to writing research grants including the preparation of grant proposals and the peer review process for research grants. We will address the development of testable research hypotheses, preparing an aims page, drafting the significance, innovation and approach sections of a grant, and preparing an NIH-formatted biosketch. Additionally, we will discuss assembling a team for conducting the work proposed in a grant, statistical power and sample size considerations and the peer-review process for research grants. The majority of class sessions will be led by guest lecturers who have substantial experience writing grants. **Prerequisites:** Students must have completed the first year of their doctoral program and obtain permission from their academic advisor.

PUH 704. Grant Writing Workshop. 1 Hour.

PUH 703 is a prerequisite to this course. This course is designed to help students further develop the proposal that was drafted in PUH 703. Students will further develop critical thinking and writing skills relevant to the preparation and submission of a National Institute of Health (NIH) Fellowship Award and an American Heart Association (AHA) Predoctoral Fellowship Award. The course is most appropriate for doctoral students who are working on their dissertation and plan to submit their fellowship award in the summer or fall.

Prerequisites: PUH 703 [Min Grade: B]