School of Public Health

Dean of the School of Public Health: Paul C. Erwin, MD, DrPH

Associate Dean for Academic Affairs: Erika (Ela) Austin, PhD, MPH

Associate Dean for Diversity, Equity, and Inclusion: April Carson, PhD

School of Public Health website: www.uab.edu/soph

Contact Number: (205) 934-4993

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, 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. We are just beginning to grasp how these determinants impact our environment, which in turn affects gene expression and individual susceptibilities to both communicable and non-communicable diseases.

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.

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 in the UAB School of Public Health have life-changing opportunities to BE SOMEBOady and MAKE A DIFFERENCE! Come join us!

Admission Requirements

Our graduate programs in Biostatistics, Environmental Health Sciences, Epidemiology, Health Behavior, and Health Care Organization & Policy 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.

The UAB Graduate School’s standard fee is $50 for domestic applicants and $60 for international applicants.

The cost for a SOPHAS application (https://sophas.org/) is $140 for the first school or program to which you apply. Any additional schools or programs to which you choose to apply will cost $50 per designation, even if you submit those schools or programs later in the application cycle. Still have questions? Send an email to soph@uab.edu or contact us by phone at (205) 934-4993.

All students admitted through SOPHAS must also complete a supplemental application. See our website (https://www.soph.uab.edu/apply/) for further information on program availability, where to apply, and when to apply.

Accelerated Learning Opportunities

Public Health offers both Fast-Track and Accelerated Bachelor's/Masters (ABM) (https://www.uab.edu/soph/home/undergraduate/accelerated-learning-opportunities/) 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).

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.

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

Students who were admitted to the Early Acceptance Program (https://www.uab.edu/graduate/programs/accelerated-learning-opportunities/).
opportunities) may enroll in the MPH program when eligible provided they maintain a 3.5 UAB undergraduate GPA.

**Additional Information**

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<thead>
<tr>
<th>Deadlines for All Applications (Both US and International)</th>
<th><a href="http://www.uab.edu/soph/home/apply">www.uab.edu/soph/home/apply</a> (<a href="http://www.uab.edu/soph/home/apply/">http://www.uab.edu/soph/home/apply/</a>)</th>
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<tr>
<td>Fall Term: Soft deadline April 1; final deadlines vary by department</td>
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<tr>
<td>Spring Term: November 1 (with the exception of Biostatistics, which only admits in the Fall).</td>
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<td>Summer Term: April 1 (with the exception of Biostatistics, which only admits in the Fall).</td>
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<td>Doctoral Programs: Deadlines vary by department</td>
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<th>Entrance Test:</th>
<th><a href="http://www.uab.edu/soph/home/apply">www.uab.edu/soph/home/apply</a> (<a href="http://www.uab.edu/soph/home/apply/">http://www.uab.edu/soph/home/apply/</a>) (GRE recommended but not required for admission to MPH programs)</th>
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| 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 (http://www.uab.edu/soph/home/apply/) |

**DEGREES OFFERED**

**Master of Public Health (MPH)**

Prospective students should click here (https://www.uab.edu/soph/home/apply/) to obtain specific admission requirements on how to apply.

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<th>Environmental Health Concentrations:</th>
<th>Environmental and Occupational Health (also online)</th>
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<td>Ecosystem Health Concentrations:</td>
<td>Environmental and Occupational Health (also online)</td>
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<td>Biostatistics Concentrations:</td>
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<td>Epidemiology Concentrations:</td>
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<td>Health Behavior Concentrations:</td>
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<tr>
<th>Accelerated Bachelor's/Masters (ABM) Health Behavior</th>
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**Health Policy and Organization Concentrations:**

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<tr>
<th>Accelerated Bachelor's/Masters (ABM) Maternal &amp; Child Health Policy &amp; Leadership</th>
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**Public Health General Degree:**

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<th>Population Health - individualized degree (also online)</th>
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**Public Health Coordinated Degree Programs:**

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<th>MPH / Doctor of Optometry</th>
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<th>MPH / Doctor of Veterinary Medicine (Auburn)</th>
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<th>MPH / Master of Science in Health Administration</th>
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**Master of Science in Public Health (MSPH)**

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<td>Epidemiology Concentrations:</td>
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<td>Health Care Organization &amp; Policy Concentrations:</td>
<td>Outcomes Research Online</td>
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<tr>
<td>Public Health MSPH Coordinated Programs:</td>
<td>MSPH / Doctor of Medicine</td>
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**Master of Science (MS)**

Prospective students should click here (https://www.uab.edu/soph/home/apply/) to obtain specific admission requirements on how to apply.
**Biostatistics Concentration:** Biostatistics

**Doctor of Philosophy (PhD)**

Prospective students should click here ([https://www.uab.edu/soph/home/apply/](https://www.uab.edu/soph/home/apply/)) 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 ([https://www.uab.edu/soph/home/apply/](https://www.uab.edu/soph/home/apply/)) to obtain specific admission requirements on how to apply.

**Health Policy and Organization Concentrations:**
- Health Policy and Organization
- Maternal & Child Health Policy
- Outcomes Research

**Biostatistics Concentration:** Biostatistics

For detailed information about the graduate programs offered, please consult the School of Public Health website ([https://www.uab.edu/soph/](https://www.uab.edu/soph/)) 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](https://www.uab.edu/soph)
Facebook: [www.facebook.com/UABSchoolofPublicHealth](http://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 goals 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] or BST 611Q [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. Prerequisites: BST 601 or 611 and 612, or 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 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])

**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 601 [Min Grade: C] or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C] or BST 611Q [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] or BST 611Q [Min Grade: B] and BST 621 [Min Grade: B] or BST 621Q [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.

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; Poison 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 longitudinal analysis.
Prerequisites: BST 623 [Min Grade: B]

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 623 [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 qualitative 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 Biostats 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.
Prerequisites: BST 621 [Min Grade: C] and BST 622 [Min Grade: C] and BST 626 [Min Grade: C]

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 611 [Min Grade: C] or BST 612 [Min Grade: C]) and (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or ENH 600X [Min Grade: C] or ENH 600Q [Min Grade: C] or ENH 611 [Min Grade: C] or ENH 611Q [Min Grade: C]) and (BST 612Q [Min Grade: C]) and (BST 612Q [Min Grade: C]) and (BST 612Q [Min Grade: C]) and (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or ENH 600X [Min Grade: C] or ENH 600Q [Min Grade: C] or ENH 600X [Min Grade: C] or ENH 611 [Min Grade: C] or ENH 611Q [Min Grade: C] or ENH 611Q [Min Grade: C] or ENH 611Q [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 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: C]

BST 725. Advances Clinical Trails. 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]

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 variation 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 601. Environmental Chemistry. 3 Hours.**
The course examines the chemical processes that are responsible for the natural characteristics of the environment (air, water and soil) as well as those impacted by man-made activities. The overall objective is to introduce basic chemistry principles, apply them to understand atmospheric, water and soil environmental systems, and study the fate and impacts of ubiquitous chemical species introduced by man-made activities. The course is structured to analyze the following thematic domains: i) aquatic chemistry and microbial chemistry; ii) atmospheric chemistry; iii) water chemistry; iv) soil chemistry; v) wastes chemistry and vi) special long-lasting and emerging environmental chemistry issues including climate change, carbon cycling, water quality and resource management, ozone hole, wastes management and recycling.

**ENH 602. Environmental Management. 3 Hours.**
Comprehensive introduction to environmental management, with emphasis on environmental health issues. Cases from both U.S. and international settings. Key topics include air and water contamination, hazardous materials, ozone depletion, climate change, risk perception, risk management, environmental communication, environmental regulation, and recent strategies for environmental management.

**ENH 605. Remote Sensing and Public Hlth. 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 608. Real World Remote Sensing. 3 Hours.**
This course will give students the chance to learn about a wide range of advanced remote sensing applications in both classroom and lab settings. This course will start out with an overview of article publication preparation and the importance of combining GIS and remote sensing data. This course will progress to students learning GIS applications and analytical techniques and how to input their remote sensing data into their own GIS for additional analysis.
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] 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 selection 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.

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 661. 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] or ENH 680Q [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. Masters Level Seminar. 1-3 Hour.
Weekly seminar series of Environmental Health Sciences faculty, postdoctoral fellows, and invited guest lecturers. All PhD candidates in Environmental Health Sciences are required to attend all of the seminars.

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. ENH 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 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] or PUH 606 [Min Grade: C])

ENH 698. Masters Directed Research. 1-9 Hour.
Independent study with guidance of appropriate faculty.

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 thoroughly 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 710. Grant Proposal Writing in Biomedical Sciences. 1 Hour.
This course will train second-year graduate students in the intricacies of writing research proposals in the biomedical sciences.

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 780. Seminars in Free Radical Biology and Medicine. 1 Hour.
This course will consist of research seminars presented primarily by leading national and international scientists working in free radical biology and medicine. These seminars are interactive with questions being asked throughout the presentation. Preq: Requires permission of instructor.

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 791. Advanced Environmental Health and Toxicology Seminar. 1 Hour.
Facilitates critical review of recent refereed publications in toxicology and presentations of research data. Students exposed to advanced knowledge and diversified subjects. Preq: ENH 650, ENH 651 or ENH 750 or permission of instructor.
Prerequisites: ENH 650 [Min Grade: C] and ENH 651 [Min Grade: C] or ENH 750 [Min Grade: C]

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.

Research for dissertation under the direction of the dissertation committee. Preq: Must be admitted to candidacy before registering for this course.
Prerequisites: GAC 2

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 604. Infectious Disease Surveillance and Control: Field Studies in Developing Countries. 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.

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 vaccination principles, current immunization strategies, their public health rationale, and use of vaccines in disease control and eradication.
Prerequisites: EPI 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610 [Min Grade: C] or EPI 610Q [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 "clinical," 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. This course is a requirement for the MSPH Pharmacoepidemiology and Comparative Effectiveness Research track. NOTE: Introductory training in epidemiology (EPI 610, BST 601 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 610L. Principles of Epidemiologic Research - LAB. 0 Hours.
Principles of Epidemiologic Research lab.

EPI 611. Data Management of Epidemiologic and Clinical Study. 4 Hours.
Epidemiology is a combination of a subject matter science and research methodology. EPI 611 focuses on the latter component. The course extends knowledge of study designs introduced in EPI 610 as applied to human populations, including randomized trials and four types of observational studies (cohort, case-control, cross-sectional, ecological). Since cause-and-effect relations are at the heart of epidemiologic research, numerous related topics are taught in EPI 611 including causal inference, bias, and effect modification. Descriptive data analysis methods are integrated within each type of design.

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

EPI 611L. Epidemiology Design and Analysis Lab. 0 Hours.
EPI 611 course and lab will focus on the research methodology for designing, implementing, analyzing and interpreting epidemiologic studies including randomized clinical trials and observational studies (case-control, cohort and cross-sectional).

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 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.

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 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610 [Min Grade: C] or EPI 610Q [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 600 or EPI 610 or equivalent introduction to epidemiology course as approved by the course director.

Prerequisites: EPI 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610 [Min Grade: C] or EPI 610Q [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 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 and files, statistical procedures (e.g., chi-square, t-test), data manipulation and 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 626. 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 601 [Min Grade: C] or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C] or BST 611Q [Min Grade: C] and (EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]) and (EPI 626 [Min Grade: C] or EPI 626Q [Min Grade: C])
EPI 627. Data Analysis and Presentation of Epidemiologic Studies. 3 Hours.
Analyze data from an epidemiologic study, addressing a specific question, 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 601Q [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 (EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C]) and (EPI 625 [Min Grade: C] or EPI 625Q [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 640. Cancer Epidemiology. 2 Hours.
This course will address methodologic and substantive issues in cancer epidemiology. The content will include definition, biological origins and pathological and clinical aspects of cancer; an introduction to information sources and methods in cancer epidemiology; the global burden of cancer; descriptive epidemiology and major risk factors for various forms of cancer; strategies for cancer prevention and the role of epidemiology in developing and evaluating those strategies. NOTE: Non-Degree students and interested students in other programs and schools are required to get instructors permission before attempting to register.
Prerequisites: EPI 600 [Min Grade: C] or EPI 610 [Min Grade: C]

EPI 660. 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 enters 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. 3 Hours.
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 fied trips and independent study. Course is held in during the Spring Term in 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 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 696. Masters Epidemiology Seminar. 3 Hours.
Critical evaluation of selected epidemiologic papers from published literature. Consideration of composition, study design, and validity of analysis. Editorial review and disposition of manuscripts.
Prerequisites: EPI 610 [Min Grade: C] and EPI 610L [Min Grade: C] and EPI 611 [Min Grade: C]

EPI 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. EPI 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 PUH 601 [Min Grade: C] or ENH 600Q [Min Grade: C] or PUH 602 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C] or PUH 603 [Min Grade: C] or HB 600Q [Min Grade: C] or PB 600Q [Min Grade: C] or PB 604 [Min Grade: C] or HCO 600Q [Min Grade: C] or PUH 605 [Min Grade: C] or PUH 606 [Min Grade: C]

EPI 698. Master's Level Directed Research Epidemiology. 1-9 Hour.
Independent study with guidance of appropriate public health faculty.

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 600 [Min Grade: C] or EPI 610 [Min Grade: C]) and (BST 601 [Min Grade: C] or BST 611 [Min Grade: C] or BST 621 [Min Grade: C])

EPI 731L. Genetic Epidemiology Lab. 0 Hours.
EPI 731 course and lab will cover core concepts of design, methods and statistical tools in genetic epidemiology studies for determining the contribution of genes to disease risk.

EPI 781. Special Topics in Epidemiology Research. 3 Hours.
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 788. Principles and Methods in Molecular Epidemiology. 4 Hours.
Molecular biology and its relevance to the epidemiology, etiology and natural history of human diseases. The course will develop knowledge and skills in molecular biology, genetics and epidemiology methods, and facilitate the application of this information to evaluate susceptibility, etiology, natural history, treatment, and prevention of diseases. 4 hours (Brown).

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 793. DrPH Practicum. 6 Hours.
Field experience course that bridges professional academic preparation and advanced public health practice. A final grade for the course will be awarded by the faculty practicum advisor and based upon the practicum mentor/supervisor's evaluation and the student's final product.

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 797. Analysis and Presentation of Epidemiologic Data. 2 Hours.
To gain experience with the analysis, interpretation, and presentation of epidemiologic data by successfully analyzing a data set and presenting the results in the form of a publication quality manuscript. NOTE: Restricted to PhD students in Epidemiology. Permission of instructor.

EPI 798. Doctoral Level Directed Research Epidemiology. 1-9 Hour.
Independent study with guidance of appropriate faculty.

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 one of three integrated core courses in the UAB Certificate in Global Health designed to introduce students to the foundations of global health programs, policies and practices.
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 on major infections of global importance, and prevention and control strategies so that infections and large disease outbreaks can be prevented and/or easily contained.

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, 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 Surveillance & 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 U.S., 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 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 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 606. Eating Disorders and Public Health Promotion. 3 Hours.
This course will examine the obesity epidemic, eating disorders, and prevention and treatment approaches at multiple levels (individual, social, environmental, and policy). Links between obesity and eating disorders will also be explored.

HB 608. Women's Health and Social Behavior. 3 Hours.
This course examines social and behavioral factors that adversely affect women's health. Students learn to apply gender specific theories to design health interventions tailored towards women.

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 610. Health Promotion/Disease Prevention: Adv Theory/Practice. 3 Hours.
This course is a comprehensive overview of methods used to develop health promotion and disease prevention programs. It focuses on understanding, synthesizing, and applying behavior change theories to public health program development. The course includes the critical review of existing assessment measurements, the development of theory-based measures and evaluation principles in the context of intervention development and implementation.

Prerequisites: HB 600 [Min Grade: C]

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 the vast majority of 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 614. Cancer Control in the Community. 3 Hours.
Students will learn to apply basic health behavior and program planning theory and models to develop, plan, implement and assess culturally and socially appropriate interventions within a public school and/or community setting. Through service learning, students will have the opportunity to implement interventions in a community setting intended to promote healthy nutrition choices, institute exercise practices, lower tobacco usage and promote the use of skin protection.
Prerequisites: HB 624 [Min Grade: C] or HB 643 [Min Grade: C]

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. Dissemination and Implementation of Disability Health. 3 Hours.
One in five people in the U.S. has a disability and the vast majority of people will be affected by disability, whether personally or through a loved one, during their lifetime. The course provides an overview of implementation science and a deep dive into a premier, national program for people with disability. Students will gain a better understanding of specific disability groups, learn about health coaching, and complete training on community engagement. The course involves creating resources and writing a small grant application. Teaching young health educators how to disseminate and implement an evidence-based program designed for people with a disability will greatly expand the reach and impact of public health.

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. Course will be graded by letter. 3 hours.
Prerequisites: HB 600 [Min Grade: C] and HB 641 [Min Grade: C]

HB 627. GIS for Public Health. 3 Hours.
This is an introductory course covering the theory and application of geographic information systems (GIS) for public health. Through this course, students will develop basic GIS skills, including GIS operations such as buffering, geocoding, layering, and spatial queries. Students will learn how to use those operations to both describe and propose solutions for public health challenges. The course will address introductory cartography and basic statistical aspects of spatial analysis. Learning will occur through lab exercises, case studies and homework exercises. The course will consist of one hour-long lecture/discussion and two hours of supervised lab/lecture each week. Course will be graded by letter. 3 hours.

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 635. Communities, Families & Health. 3 Hours.
This course is designed for graduate students in public health and related fields interested in working with families and communities to improve health outcomes. It is intended to provide students with a broader understanding of the structural and psychosocial factors related to health and well-being. To do so, the course will focus on theoretical frameworks that draw on an ecological perspective and examine how factors associated with families, peers, schools, neighborhoods, and communities influence health. Emphasis will also be placed on the relevance of individual and community assets for the science of Health Behavior and the broader public health arena. Course will be graded by letter. 3 hours.

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 638. Public Health Promotion and Aging Seminar. 3 Hours.
Exploration of current problems of the elderly, introduction to broad principles of health promotion for the elderly and review model health promotion programs. Course will be graded by letter.
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.
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 693. 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 706. Energetics: Scientific Foundations of Obesity and Other Health Aspects. 3 Hours.
The aim of this course is to acquaint individuals doing scholarly work related to obesity with the fundamental principles of energetics and their applications, and to use those in assessing the causes and treatment of obesity. The first part of the course will go over fundamental knowledge in this area, which will be covered by a midterm examination, and the second part of the course will go over research applications, which will be incorporated into the final term paper. Course will be graded by letter. 3 hours.

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 Mental Health Promotion and Professional Development. 2 Hours.
In this advanced course on mental health promotion and professional development, students will gain a deep understanding of mental health topics relevant for graduate students, professional students, and postdoctoral fellows. Students will 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. Students will participate in experiential learning opportunities with community with programs, clinics, and/or agencies that address mental health needs in some capacity. Students will have opportunities to share reflections about experiences, insights gained related to mental health promotion and professional development.

Prerequisites: HB 710

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.

Prerequisites: HB 750 [Min Grade: C]

HB 734. 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. 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 740. Advanced Health Program Evaluation Seminar. 3 Hours.
Advanced review of evaluation theories, approaches, and methods for assessing the plans, implementation, and effectiveness of health promotion programs. Course will be graded by letter. Prerequisite: HB 643 or other master's level evaluation course and a graduate level multiple regression or multivariate statistics course. 3 hours.

Prerequisites: HB 643 [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 review 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.
Prerequisites: HB 641 [Min Grade: C]

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 760. Planning and Administration of Health Education and Promotion Programs. 3 Hours.
The purpose of this course is to teach and practice the three basic phases of comprehensive health education and promotion programs (planning, implementation and evaluation). Course will be graded by letter.
Prerequisites: HB 750 [Min Grade: C] and HB 724 [Min Grade: C]

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 771. Seminar in Health Education/Health Promotion Session I. 1 Hour.
The purpose of this course is to teach and practice the three basic phases of comprehensive health education and promotion programs (planning, implementation and evaluation). Course will be graded by letter. 3 hours.

HB 772. Seminar in Health Education/Health Promotion Session II. 1 Hour.
This course is the second in a series of three 1-hour Doctoral Seminar classes. This seminar series is designed to meet the specific needs of graduate students by better preparing them for successful completion of their respective degrees as well as their future as health education professionals. Course will be graded by letter. Pre-requisite HB 771.
Prerequisites: HB 771 [Min Grade: C]

HB 773. Seminar in Health Education/Health Promotion Session III. 1 Hour.
This course is the third of a series of three 1-hour Doctoral Seminar classes. This seminar series is designed to meet the specific needs of graduate students by better preparing them for successful completion of their respective degrees as well as their future as health education professionals. Course will be graded by letter. Pre-requisites HB 771 & 772. 1 hour.
Prerequisites: HB 771 [Min Grade: C] and HB 772 [Min Grade: C]

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.

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

HCO-Health Care Organization Courses

HCO 600. Management and Policy in Public Health Systems and Services. 3 Hours.
This course is a departmental core course for students matriculating in HCO. 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.

HCO 601. Health Economics. 3 Hours.
Economics as systematic way of thinking about use of resources. Tools of economics applied to issues of organization, delivery, financing, and outcome of health care. Develops economic principles and describes system of health care financing and delivery in the United States, providing basis for analyzing health management and policy options. With didactic coursework provided in HCO 601, doctoral students prepare a major paper under instructor's direction.

HCO 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.

HCO 603. Public Health Policy. 3 Hours.
Theoretical framework and concepts used to understand evolution of public health policies and processes of policy formulation, implementation, and change. Significance of health policy for public health practical foundation of knowledge and skills useful in analyzing and responding to policy environment. Doctoral student will have an emphasis on independent analysis of health policy issues. Prq: HCO 601 or HCO 701 recommended.
HCO 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 of 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.

HCO 605. Foundations of Maternal and Child Health: Programs and Policies for Women, Children, and Families. 3 Hours.
The purpose of this course is to provide students with knowledge about current major Maternal and Child Health (MCH) issues (health, social, economic, and environmental) and programs and policies designed to address these issues among women of reproductive age, infants, and children. 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. Course work also includes a review of factors that influence policy development and program implementation, including: 1) research, 2) data issues, 3) current public policy reform movements, and 4) advocacy. 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.

HCO 606. Fundamentals of Maternal and Child Health Part II: Application of Essential MCH Skills. 3 Hours.
The purpose of this course is to introduce students to basic research methods used by public health practitioners, with a specific focus on their use in the MCH field and to introduce the needs assessment, program planning, and evaluation processes specifically related to public health and finally to provide practical educational experiences to develop skills in applying several research methods and the range of activities needed to conduct needs assessments and use the information gathered to plan, direct, and evaluate public health programs and impact public health policies.

Prerequisites: HCO 605 [Min Grade: C]

HCO 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.

HCO 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.

HCO 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 HCOP students.

HCO 610. Global Health Law. 3 Hours.
This course will provide a systematic overview of global health law. It will focus on the diplomatic, political, social and economic factors that impact the substance of global health law. I will provide an introduction to the nature and sources of international law as well as the role of multiple international agencies that affect global health (e.g., WHO, UNAIDS, World Bank). Key themes in the course include: health equity; global solidarity; health in all policies; good governance, and the right to health care.

HCO 611. Child Health and Development: Womb to Young to Adulthood. 3 Hours.
The premise of this course is that an understanding of principles of development is critical to developing, implementing, and evaluating effective programs and services for children and women of childbearing age. Through didactic, experiential, and interactive learning activities students will explore the processes that influence children’s health and development and the supports and services that are needed to enhance those mechanisms. Issues for children and adolescents with special health care needs and well as typically developing children and youth will be included in lectures, discussions, and class projects.

HCO 612. Strategic Management in Health Programs. 3 Hours.
Provides a framework for strategic management in health care and public health organizations and provides opportunities to develop strategic plans for health care organization. Objectives are: to relate prior knowledge and experience to specific problem-solving situations; encourage strategic thinking in decision making in health care organizations; provide opportunities to engage in and manage a group decision-making process; gain experience in analyzing the public health environment and prepare a strategic plan for that environment; and develop implementation plans to accomplish strategic plans.

HCO 613. Health Information in Technology & 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.

HCO 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.
HCO 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 management's 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 sector. Some of the articles relate to domestic (USA) while others relate to management in the international context. Some of the articles focus on public health organizations, some on hospitals, others on nursing homes, etc.

HCO 619. Social Work in Public Health. 3 Hours.
Introduction and overview of the field of public health and the subspecialty of public health social work. Provides practical macro-level skills and explores the role and functions of social workers within major public health programs.

HCO 620. Health Insurance & 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.

Prerequisites: HCO 601 [Min Grade: C] or HCO 604 [Min Grade: C] or HA 645 [Min Grade: C] or AH 701 [Min Grade: C]

HCO 621. Clinical Decision Making and Cost-Effectiveness Analysis. 3 Hours.
Cost-effectiveness analysis applies decision analysis to circumstances where both costs and outcomes are important criteria for making choices. This course is designed to provide students with an understanding of the methods and uses of decision analysis and cost-effectiveness analysis. Students are not assumed to have any prior exposure to the field of decision 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 also will introduce several intermediate-to-advanced topics. This course is open to Master's and Doctoral students from the School of Nursing and the School of Health Professions. The overall purpose is to train informed consumers of cost-effectiveness analyses, able to assess the quality of studies presented in the literature and determine when the results are valid and applicable to policy decisions in public health and medicine. NOTE: If course work (BST 601 or BST 611 and BST 612) are not met, then permission of instructor is required.

Prerequisites: BST 601 [Min Grade: C] (Can be taken Concurrently) or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C] (Can be taken Concurrently) or BST 611Q [Min Grade: C] and BST 612 [Min Grade: C] (Can be taken Concurrently) or BST 612Q [Min Grade: C]

HCO 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: HCO 621 [Min Grade: C] or HCO 721 [Min Grade: C]

HCO 623. Pharmacoeconomics and Regulation. 3 Hours.
The purpose of this course is to provide an introduction to pharmacoeconomics and the regulatory role of the FDA. Topics include the role of the FDA, the drug approval process, patents and market exclusivity, tort liability, advertising restrictions, the economics of drug discovery and marketing, pricing, reporting economic evaluations, health care rationing, and pharmacogenomics.
Prerequisites: (HCO 601 [Min Grade: C] or HCO 601Q [Min Grade: C]) and (HCO 621 [Min Grade: C] or HCO 621Q [Min Grade: C] or HCO 721 [Min Grade: C])

HCO 624. Healthy Lifestyles for the MCH Population: Integrating Nutrition with Physical Activity. 3 Hours.
This course will examine healthy lifestyles from the community viewpoint. Although nutrition is the primary focus of the course, it will also explore how nutrition and physical activity are integrated in programs and interventions for healthy lifestyles for the MCH population. There will be an emphasis on childhood obesity prevention and intervention. The course will integrate the Life Course model, illustrating the importance of early intervention as well as intervention at critical periods. This course will allow students to design an intervention and develop a policy paper to support MCR nutrition initiatives. Students will learn community-based strategies for promoting healthy lifestyles through improved eating and physical activity behaviors. The application of community-based planning based on "five cornerstones of a healthy lifestyle" (MCRB and ASTPHND,2008): access, collaboration, science and research, workforce, and communication will be included.

HCO 625. Advanced Leadership and Practice in MCH Part I - Introduction to Leadership. 1 Hour.
The purpose of this course 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. This course is required for MPH and DrPH students in the HCOP/Maternal and Child Health track and is open to students from other tracks and departments. It is offered as a 3, one-hour course sequence to allow sufficient time for students to develop the background and skills that build upon each other. Other faculty members and external guest presenters will be invited to address specific topics. The course will include lectures, small group discussions, exercises, individual projects and service-learning field-based activities. Student presentations are required.

HCO 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 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: HCO 625 [Min Grade: C] (Can be taken Concurrently) or HCO 625Q [Min Grade: C] (Can be taken Concurrently)

HCO 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: HCO 625 [Min Grade: C]
HCO 628. Qualitative and Mixed Methods Research in Public Health. 3 Hours.
The class is designed to be interactive with practice sessions in class for the various skills of qualitative research: observation, writing, coding, analysis, individual interviewing, and focus group discussions. There will be three activities that will give the students a taste for being “in the field”: non-participant observation, a mock focus group, and in-depth interviews. Students will experience writing field notes, memo writing, coding, and abstracting from data via these three activities. Because many students will be applying qualitative methods in evaluation and needs assessment projects in the field of public health, we will also focus on these aspects in class.

HCO 629. Immigrant Health. 3 Hours.
The purpose of this course is to provide an overview of key public health issues facing immigrant populations in the US, including the interrelationship between migration processes and health behaviors and outcomes, health and disease burdens for immigrant subgroups (e.g., Latinos, children), health care access and use, and health promotion/disease prevention.

HCO 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.

HCO 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 role, 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.

HCO 632. Readings in Maternal Child Health. 1-3 Hour.
Critical analysis of literature in single area of maternal and child health under supervision of faculty member.

HCO 633. Research Design and Analysis. 2 Hours.
The Research Design and Analysis course is designed to provide graduate students with an introduction to fundamental tools needed to propose, conduct, and assess outcomes of their research. The course will take them from the basics of developing hypotheses, conducting literature reviews (including an introduction to legal research) and critically analyzing literature reviewed, formalizing constructs to be addressed and developing valid, accurate and reliable tools/techniques to measure those constructs, and finally, will address how to analyze and interpret results.

HCO 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.

HCO 635. Writing Grants and Programming Awards in Public Health. 3 Hours.
Whether your public health career path leads you to a position in a public, non-profit, private, or academic setting, you will very likely be involved in some capacity with either writing or managing a grant. This course on grant-writing will provide you with in-demand skills necessary to possess when seeking a job in the field of public health. You will learn how to: 1) communicate your ideas effectively and persuasively, 2) write clearly and succinctly, 3) prepare a coherent, logical research plan, and 4) develop an organizational and management plan for carrying out your work. At the completion of this course, students will have written a grant proposal that is suitable for submission to an extramural funding agency.

HCO 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.

HCO 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 HCO 636, students will engage in case studies that provide insight into how public health leaders historically approached complex, multifactorial 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.

HCO 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.
HCO 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.

HCO 641. Health Preparedness and Response Policy. 3 Hours.
Preparedness policy can be defined as the sum of national and subnational governmental activities with the intent to protect the public’s health and security. Discussions in this course will focus on policy and policy making in the U.S. and more particularly on preparedness policy and its evolution since 9/11. The purpose of this course will be to develop a skill set that will allow students to frame issues into social, cultural, regional and ethical norms, consider historical and political influence policy choices. Courses is for advanced MPH or doctoral students with an interest in preparedness policy, emergency management, or public health preparedness.

HCO 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. NOTE: It is preferred that this course be completed during the final year of enrollment; however, any MPH candidate who has completed the entire core curriculum is eligible to enroll in the course.

HCO 643. Emergency Preparedness Exercise, Evaluation & 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.

To introduce the needs assessment, program planning and evaluation processes specifically related to public health and to provide practical experiences to develop skills in the range of activities needed to conduct needs assessments and use the information gathered to plan, direct, and evaluate public health programs and impact public health policies.

HCO 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.

HCO 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. It is a required course for the MPH in Health Policy, the MPH in Public Health Preparedness, the MSPH in Outcomes Research and the DrPH in Public Health Management.

HCO 672. Perinatal Health: Issues, Data & 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-level is an elective for students seeking the Master of Public Health (MPH) degree and the Doctor of Public Health (DrPH) in the Department of Health Care Organization and Policy’s MCH Leadership and Policy Track. It is offered at the 700-level for doctoral students. Other students interested in this area are encouraged to register. An introductory SAS course is recommended but not required.

HCO 673. Applied Health Policy: Global Child Health Issues. 3 Hours.
The focus of the course will be on four current and complex policy issues (2 domestic; 2 international): refugee health; immunization activities and the link to autism; obesity in children and physical inactivity; and child labor. Pertinent background information related to international, federal, state and local policies and systems will be studied. Students should gain both technical capacity for analysis and an understanding of the health policy process. This course is intended for advanced MPH or doctoral students with an interest in health policy, international health, or maternal and child health.

HCO 675. Improving Health Care Quality and Outcomes. 3 Hours.
Examination of current issues in quality of care and outcomes management. The course includes a review of past and current efforts, tools, and theories of quality assessment, assurance, utilization management, and measuring and improving outcomes.

HCO 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.

HCO 680. Aging Policy. 3 Hours.
Providing for the physical and economic well-being of the aging population is a continual challenge facing society. The objectives of this course are to develop an understanding of the influence of demographic changes, economic factors, and public policy on the health status and health care of the aging population; investigate the work, retirement, savings, and health insurance decisions facing the elderly; describe the system of health care financing and delivery arrangements for the elderly in the United States and other developing countries. NOTE: Basic biostatistics or equivalent required.

Prerequisites: BST 601 [Min Grade: C](Can be taken Concurrently) or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C](Can be taken Concurrently) or BST 611Q [Min Grade: C]
HCO 686. Integrative Health Policy Analysis. 3 Hours.
The aim of this interdisciplinary course is to engage students in critical thinking about the goals, paradigms, effectiveness and implementation of health care policy in the United States. The course will incorporate several concepts from public policy analysis, public policymaking, health politics, public opinion research, media research, and technical-writing communication. NOTE: There are no prerequisite course requirements; however, students are expected to be familiar with the basics of the U.S. health care system and prior experience in health policy will be useful.

HCO 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 601 [Min Grade: C] (Can be taken Concurrently) or BST 601Q [Min Grade: C] or BST 611 [Min Grade: C] (Can be taken Concurrently) or BST 611Q [Min Grade: C]

HCO 690. Integrative Experience. 3 Hours.
This course has been designed "to synthesize and integrate knowledge acquired in course work and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice" through the analysis of actual cases from the annals of public health practice, participation in a strategic planning exercise, and the development of a new case from current and emerging areas of critical interest to public health. Students working in multi-disciplinary groups will demonstrate their ability to apply the general and specific public health knowledge they have acquired through their courses of study and effectively apply that knowledge across disciplines to the effective resolution of public health problems.

HCO 691. 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 spreadsheets with various types of randomness, bootstrapping historical data to estimate how much a model's results may vary, discrete event modeling, queuing, Markov models, System Dynamics models and Agent Based models. If time permits, we will also look at Linear Programming.
Prerequisites: BST 601 [Min Grade: C] (Can be taken Concurrently) or BST 601Q [Min Grade: C] and HCO 604 [Min Grade: C] (Can be taken Concurrently)

HCO 692. Adv Top Hlth Disparities Rsch. 3 Hours.
The primary aim of this course is to engage students in critical thinking about the current paradigms for health care disparities research in the U.S. 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. A secondary aim is to provide students with a broad overview of health and health care disparities according to race/ethnicity, gender, and health status. The three specific racial/ethnic groups are: African Americans, Hispanic/Latinos, and Asian/Pacific Islanders. The gender classifications include men and women. The health status groupings include persons with chronic health problems (such as diabetes or mental health condition, e.g. schizophrenia).

HCO 694. Special Problems in Policy Analysis. 3 Hours.
Continuation of HCO 693 - Policy Analysis: Modeling and Simulation.
Prerequisites: HCO 693 [Min Grade: C]

HCO 695. Seminar in Health Care Organization. 1-3 Hour.
Factors currently influencing finance and administration of public and private health programs; availability, accessibility, and utilization by selected population groups.

HCO 696. Selected Topics in Public Health Finance. 3 Hours.
Financing of public health programs; sources of revenue (grants and contracts, tax revenues, and service fees), capital financing, and management of cash flows Techniques of maximizing revenues in public health programs.
Prerequisites: HCO 601 [Min Grade: C]

HCO 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. HCO 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 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])

Independent study with guidance of appropriate faculty.

Research for project under direction of appropriate faculty and/or research project committee.
Prerequisites: GAC M

HCO 701. Health Economics. 3 Hours.
Economics as systematic way of thinking about use of resources. Tools of economics applied to issues of organization, delivery, financing, and outcome of health care. Develops economic principles and describes systems of health care financing and delivery in the United States, providing basis for analyzing health management and policy options. With didactic coursework provided in HCO 601, doctoral students prepare a major paper under instructor's direction.
Prerequisites: BST 611 [Min Grade: C]

HCO 703. Public Health Policy - Doctoral Level. 3 Hours.
Theoretical framework and concepts used to understand evolution of public health policies and processes of policy formulation, implementation, and change. Significance of health policy for public health practical foundation of knowledge and skills useful in analyzing and responding to policy environment. Doctoral students will have an emphasis on independent analysis of health policy issues.
Prerequisites: HCO 601 [Min Grade: C] or HCO 701 [Min Grade: C]
HCO 704. Health Economics and Public Health Policy. 3 Hours.
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 of 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.

HCO 706. Strategic Mgmt Theory/Research. 3 Hours.
AH 706: 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. The mission of the strategic management track is to develop highly qualified strategic management scholars and teachers who are contributing to the field. We accomplish this mission through: Our strategic management courses, Faculty/student interaction, Publishing and presenting our work, and Teaching others.

HCO 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.

HCO 711. Child Health and Development: Womb to Young to Adulthood. 3 Hours.
The premise of this course is that an understanding of principles of development is critical to developing, implementing, and evaluating effective programs and services for children and women of childbearing age. Through didactic, experiential, and interactive learning activities students will explore the processes that influence children's health and development and the supports and services that are needed to enhance those mechanisms. Issues for children and adolescents with special health care needs and well as typically developing children and youth will be included in lectures, discussions, and class projects.

HCO 713. Health Information Technology and Policy. 3 Hours.
Expands on content of introductory course in health policy. Insights into system’s attributes; characteristics dictating its structure and function.

HCO 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 HCO-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.

HCO 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.

HCO 716. Advanced Leadership and Practice Seminar. 3 Hours.
The goal of the DrPH program in the Department of Health Care Organization and Policy is to prepare students to serve and succeed as leaders in public health practice, in public health research settings, or in both. Therefore, the aims of this seminar are multifaceted. 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 II, 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.

HCO 717. Seminar in Public Health Policy. 3 Hours.
The purpose of this course is to enhance doctoral students’ understanding of policy and their ability to integrate policy into research and practice. The course will engage students in discussion and reflection about the intersection between policy and public health practice, with an emphasis on tools and skills needed for policy development. Prerequisites: Ideally, students will have taken all course work prior to taking this course. However, the DrPH director and course instructors may make exceptions.

HCO 718. Mgt Concepts in Pub Hlth Progs. 3 Hours.
Organization structure, management, finance and budgeting, human resources, contracts, negotiation, and operations research in public health settings. Presentation of general principles combined with study of actual cases from practice.

HCO 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.

Prerequisites: HCO 604 [Min Grade: C] (Can be taken Concurrently) or HA 645 [Min Grade: C] (Can be taken Concurrently) or AH 701 [Min Grade: C] (Can be taken Concurrently)
HCO 721. Clinical Decision Making and Cost Effectiveness Analysis. 3 Hours.
The objectives of this course are to acquaint public health and other professionals with techniques of decision making under conditions of uncertainty and the basics of cost-effectiveness analysis. Topics include decision analysis, Markov processes, Monte Carlo simulation, valuing diagnostic tests, and measuring the costs and outcomes of health service programs. Students who successfully complete the course will be able to understand the strengths and limitations of these types of analysis and determine the relevance of research findings to their own areas of expertise. NOTE: If course work (BST 601 or BST 611 and BST 612) are not met, then permission of instructor is required.
Prerequisites: BST 601 [Min Grade: C] or BST 611 [Min Grade: C] and BST 612 [Min Grade: C]

HCO 722. Cost-Effectiveness Research Methods. 3 Hours.
The objective of this course is to familiarize students with the design and implementation of cost-effectiveness and cost-benefit analysis. Specific topics include cost estimation, effectiveness measurement, time preference, uncertainty, ethical issues, valuing health outcomes, and ethical issues in cost-effectiveness research. At the end of the course students will develop and present analysis plans related to their particular fields of practice. Preq: HCO 721 or permission of instructor.
Prerequisites: HCO 721 [Min Grade: C]

HCO 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.

HCO 728. Qualitative and Mixed Methods Research in Public Health. 3 Hours.
The class is designed to be interactive with practice sessions in class for the various skills of qualitative research: observation, writing, coding, analysis, individual interviewing, and focus group discussions. There will be three activities that will give the students a taste for being "in the field": non-participant observation, a mock focus group, and in-depth interviews. Students will experience writing field notes, memo writing, coding, and abstracting from data via these three activities. Because many students will be applying qualitative methods in evaluation and needs assessment projects in the field of public health, we will also focus on these aspects in class.

HCO 729. Immigrant Health. 3 Hours.
The purpose of this course is to provide an overview of key public health issues facing immigrant populations in the US, including the interrelationship between migration processes and health behaviors and outcomes, health and disease burdens for immigrant subgroups (e.g., Latinos, children), health care access and use, and health promotion/disease prevention. This course is designed to be taken by doctoral students in either a DrPH program or a health related PhD program at UAB. Knowledge of quantitative or qualitative methods and experience with data analysis will be helpful for completion of the final research project.

HCO 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.

HCO 735. Writing Grants and Programming Awards in Public Health. 3 Hours.
Whether your public health career path leads you to a position in a public, non-profit, private, or academic setting, you will very likely be involved in some capacity with either writing or managing a research/evaluation grant. This doctoral-level course on research grant-writing will provide you with in-demand skills necessary to possess when seeking a research or evaluation job in the field of public health. You will learn how to: 1) communicate your ideas effectively and persuasively, 2) write clearly and succinctly, 3) prepare a coherent, logical research plan, and 4) develop an organizational and management plan for carrying out your work. Students will learn how to find the right grant mechanism, plan and write a successful grant proposal, put together a good research team, as well as create budgets and other administrative sections of grants. In addition, students will gain understanding of the grant peer review process, how to handle resubmissions, and post-award management. At the completion of this course, students will have written a research grant proposal (such as an NIH R03 grant) that is suitable for submission to an extramural funding agency.

HCO 740. 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.

HCO 741. Health Preparedness and Response Policy. 3 Hours.
Preparedness policy can be defined as the sum of national and subnational governmental activities with the intent to protect the public's health and security. Discussion in this course will focus on policy and policy making in the U.S. and more particularly on preparedness policy and its evolution since 9/11. The purpose of this course will be develop a skill set that will allow students to frame issues into social, cultural, regional, and ethical norms, consider historical and political influence policy choices. Course is form advanced MPH or doctoral students with an interest in preparedness policy, emergency management, or public health preparedness.
HCO 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. NOTE: It is preferred that this course is completed during the final year of enrollment; however, any MPH candidate who has completed the entire core curriculum is eligible to enroll in the course.

HCO 743. Emergency Preparedness Exercise, Evaluation & 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.

HCO 772. Perinatal Health Issues. 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-level is elective for students seeking the Master of Public Health (MPH) degree and the Doctor of Public Health (DrPH) in the Department of Health Care Organization and Policy’s MCH Leadership and Policy Track. It is offered at the 700-level for doctoral students. Other students interested in this area are encouraged to register. An introductory SAS course is recommended but not required.

HCO 773. Applied Health Policy:Global/Child Health Issues. 3 Hours.
The focus of the course will be on four current and complex policy issues (2 domestic; 2 international): refugee health; immunization activities and the link to autism; obesity in children and physical inactivity; and child labor. Pertinent background information related to international federal, state and local policies and systems will be studied. Students should gain both technical capacity for analysis and an understanding of the health policy process. This course is intended for advanced MPH or doctoral students with an interest in health policy, international health, or maternal and child health.

HCO 777. Patient-Based Outcomes Measures. 3 Hours.
This course will provide a detailed examination of patient based outcomes measurement in the context of health care delivery systems and health care policy. 
Prerequisites: BST 611 [Min Grade: C] and BST 612 [Min Grade: C]

HCO 781. Research Methods ans Study Design. 3 Hours.
This course examines empirical methods utilized in health policy and management research.

HCO 782. Advanced Casual Inference. 3 Hours.
Casual inference involves the methods and thinking one uses to move from associations to cause-and-effect relationships. This course provides an intermediate treatment of econometric and biostatistical methods for the casual inference in public health.

HCO 786. Integrative Health Policy Analysis. 3 Hours.
The aim of this interdisciplinary course is to engage students in critical thinking about the goals, paradigms, effectiveness and implementation of health care policy in the United States. The course will incorporate several concepts from public policy analysis, public policymaking, health politics, public opinion research, media research, and technical-writing communication. NOTE: There are no prerequisite course requirements; however, students are expected to be familiar with the basics of the U.S. health care system and prior experience in health policy will be useful.

HCO 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: BST 601 [Min Grade: C]

HCO 788. Longitudinal Meth Hlth Ser Res. 3 Hours.
This course provides an intermediate treatment of econometric and biostatistical methods for longitudinal analyses of data in public health.
Prerequisites: HCO 787 [Min Grade: B]

HCO 791. Policy Analysis:Modeling & Simulation. 3 Hours.
Training in basic skills necessary to design, test, implement, manage, present, and critique policy analysis in health care sector. Fundamentals of policy research design, and linkage between theory and operation. Various research techniques examined case studies and analyses of secondary data. Emphasis on choosing appropriate analytical strategies for particular policy issues. Data analysis using computers and critical evaluation of technical policy literature. Special topics in econometrics also addressed. Original policy analytic paper required at end of sequence. Preq: BST 600 or higher. 
Prerequisites: BST 600 [Min Grade: C]

HCO 792. Advanced Topic in Health Disparities Research. 3 Hours.
This primary aim of this course is to engage students in critical thinking about the current paradigms for health care disparities research in the U.S.

HCO 793. DrPH Practicum. 3-6 Hours.
Doctoral students are required to complete a 6 hour practicum working in a public health agency or organization.

HCO 795. Directed Readings. 1-5 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.

HCO 796. Doctoral Seminar. 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.

HCO 797. Directed Readings. 3-9 Hours.
The primary aims of this seminar are to engage students in critical thinking about current issues in management research, public health policy and public health practice and to expose students to state-of-the-art methodological issues in health services research.
PUH 600. Overview of Public Health. 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.

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 writing best practices, including ethics for authors, and gain knowledge and confidence as writers after completing weekly non-graded writing/reading assignments, 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 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 695. Environment and Health: The MPH Capstone. 3 Hours.
Applying the evidence-based public health framework to Environment and Health. The environment – both natural and built – is both the ultimate context for, and predominate influence in the capacity of individuals, households, and communities to attain the WHO definition of health: a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Students will learn to assess the environment; quantify and analyze environmental data; understand and determine appropriate programs and policies to address identified environmental concerns; understand the management of local, state, and federal government environmental programs; and learn methods for evaluating environmental programs and policies. Students will be challenged to demonstrate how the unique competencies attained in their MPH concentration contribute to the exploration of the impact of the environment on human health. Upon completing this Capstone course, students will understand how their concentration-specific skills and perspective can be used to address any major public health problem.

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] or (EPI 600 [Min Grade: C] or EPI 600Q [Min Grade: C] or EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C] or PUH 603 [Min Grade: C] or (HB 600 [Min Grade: C] or HB 600Q [Min Grade: C] or PUH 604 [Min Grade: C] or (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or PUH 605 [Min Grade: C] or PUH 606 [Min Grade: C] or (HCO 600 [Min Grade: C] or (HCO 600Q [Min Grade: C] or (ENH 697 [Min Grade: C] or ENH 697Q [Min Grade: C] or (EPI 697 [Min Grade: C] or EPI 697Q [Min Grade: C] or (HB 697 [Min Grade: C] or HB 697Q [Min Grade: C] or (HCO 697 [Min Grade: C] or (HCO 697Q [Min Grade: C] or PUH 697Q [Min Grade: C])

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 697. Practice Placement / 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. PUH 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 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 EPI 610 [Min Grade: C] or EPI 610Q [Min Grade: C] or PUH 603 [Min Grade: C] or (HB 600 [Min Grade: C] or HB 600Q [Min Grade: C] or PUH 604 [Min Grade: C] or (ENH 600 [Min Grade: C] or ENH 600Q [Min Grade: C] or PUH 605 [Min Grade: C] or PUH 606 [Min Grade: C] or (HCO 600 [Min Grade: C] or (HCO 600Q [Min Grade: C] or (ENH 697 [Min Grade: C] or ENH 697Q [Min Grade: C] or (EPI 697 [Min Grade: C] or EPI 697Q [Min Grade: C] or (HB 697 [Min Grade: C] or HB 697Q [Min Grade: C] or (HCO 697 [Min Grade: C] or (HCO 697Q [Min Grade: C] or PUH 697Q [Min Grade: C])

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.