MPHO - Master of Public Health

MPHO 600 Introduction to Public Health Practice (1 Credit Hour)
This course provides an introduction to the multidisciplinary field of public health. Students will learn the history, core functions, and roles of the US public health system through grounding in the 12 foundational public health knowledge areas.

MPHO 605 Introduction to Biostatistics for Public Health (3 Credit Hours)
This course introduces fundamental concepts in biostatistics. Students will learn how to analyze and interpret numeric data using statistical tools to investigate and evaluate public health issues.

MPHO 608 Environment and Public Health (3 Credit Hours)
This course provides an introduction to 21st century environmental health science and practice. In addition to covering foundational environmental issues affecting people's health, the class familiarizes students with contemporary environmental health challenges such as climate change, sea level rise, antibiotic resistance, food and sustainability, plastics and environmental health, disaster preparedness, lead poisoning, radiation safety and health, environmental justice, cultural competence, and environmental risk communication.

MPHO 610 Introduction to Public Health Practice (1 Credit Hour)
This introductory readings course provides students with an overview of the public health sector from a local, national, and global perspective. The history of public health and recent events leading to a complete transformation of service delivery are two of the topics presented.

MPHO 611 Social and Behavioral Sciences for Public Health (3 Credit Hours)
This course reviews and critiques psychological, social, and cultural concepts and models relevant to health and disease in society. Students will learn how to select and apply appropriate social and behavioral models to the design of public health interventions and policies. Existing social inequalities in health status related to race, social class, and gender will be explored, as will the intersection between risk factors and the development/implementation of public health interventions.

MPHO 612 Statistical Reasoning for Public Health (3 Credit Hours)
This course is an introduction to the use of statistics in the health field with emphasis on descriptive statistics, estimation, linear regression and contingency tables.

MPHO 613 Principles of Environmental Health Science (3 Credit Hours)
This course is an introduction to the chemical, physical and biological factors affecting human health and disease with emphasis on the skills to detect environmental factors in health problems and to determine methods of control to prevent disease and maximize environmental quality.

MPHO 614 Principles of Epidemiology (3 Credit Hours)
This course will introduce the principles and basic methods of epidemiology for applications in public health. These include measures of disease frequency and association, study design, sources of errors in epidemiological studies, validity and reliability of diagnostic and screening tests, causation, and outbreak investigations.

MPHO 616 Research Methods in Public Health (3 Credit Hours)
Public health professionals require skills to identify problems that face population groups, and to delineate ways to solve them. Often this necessitates conducting small- or large-scale investigations on their own, or as a member of a project team. The goal of this course is to provide practical, step-by-step guidance to the research process in public health.

MPHO 620 Health Management and Systems Thinking (3 Credit Hours)
In this course, students will review the structure and functions of American and international healthcare systems, public health practice, and managerial responsibilities. Additionally, this course will introduce students to the practice of systems thinking in public health and the influence of systems thinking on public health policy.

MPHO 622 Environmental Health Law, Justice and Governance (3 Credit Hours)
This course surveys the basic legal concepts affecting environmental health services and program enforcement & administration. It is designed to provide a fundamental background of environmental and public health law for public health officers and other environmental health workers to fulfill their respective roles more successfully.

MPHO 626 Effective Information Technology for Healthcare Organizations (3 Credit Hours)
This course provided the key concepts related to information technology within healthcare organizations. Students will learn how information technology is used as a tool to improve performance within health care organizations for positive health outcomes.

MPHO 627 Data Visualization (3 Credit Hours)
This course is intended to be a step-by-step introduction to the world of visual analytics and is designed for the beginner and intermediate uses of data visualization. The course will help students to understand and apply important concepts and techniques in data visualization, moving from simple to complex situations and combine them in interactive dashboards. Topics to be covered include data connection, different graphs and charts, quick table calculations, designing interactive dashboards, mapping, unions and joints.

MPHO 630 Health Communication and Social Marketing for Public Health (3 Credit Hours)
This course examines social marketing concepts and tools for influencing health behavior change. Students learn how to design, implement, and evaluate strategies for social marketing campaigns.

MPHO 631 Statistical Software for Public Health (3 Credit Hours)
This course is a collection of modules that introduce students to selected statistical software that are used widely in many areas of public health and research. The course will familiarize students with the primary features of statistical software, as well as database management, basic programming skills and tools, and some simple statistical procedures.

MPHO 632 Environmental and Occupational Health Risk Assessment (3 Credit Hours)
This course is an introduction to risk assessment, as applied to environmental and workplace hazards. It examines the fundamental concepts of risk. Students will learn the United States Environmental Protection Agency (USEPA) standard and advanced methodology for quantitative risk assessment including hazard identification, exposure assessment, dose-response modeling, risk characterization, and risk communication. Utilization of qualitative assessment methods and ecological risk assessment are also explored.

MPHO 633 Financing Healthcare (3 Credit Hours)
Students will examine financial evaluation of the health care industry, the source of funds, and the effects of changing patient policies. Other topics of interest will be financial strategies, budgets and capital outlay.

MPHO 634 Health Law and Ethics (3 Credit Hours)
This course examines legal, regulatory and ethical issues health professionals are likely to confront. In this course, we will examine the legal principles needed to analyze regulatory and liability issues. We will study selected principles and policies under-girding health, the American system of health law, including common law principles of liability and federal/state legislation regulating health professionals and operations. We will also discuss the impact of state and federal law on the operation of various health-related organizations.

MPHO 635 Healthcare Marketing (3 Credit Hours)
This course examines marketing principles, concepts and skills applied to health care organizations and health care networks. Students will examine marketing methodologies and principles for evaluating consumer decision making actions for health care services. The course will place emphasis on social media and electronic forms of marketing health care services. The course will culminate with the development of a strategic health care marketing plan.

MPHO 640 Health Disparities and Social Justice (3 Credit Hours)
This course provides an introduction to the topic of global health disparities through an in-depth examination and discussion of the relationship between social injustice and inequitable health outcomes. Students will be introduced to the behavioral, social and environmental determinants of health disparities and the pathways and mechanisms leading to inequitable health outcomes in vulnerable groups, as well as strategies for addressing these determinants to improve health.

MPHO 643 Principles of Toxicology (3 Credit Hours)
This course is an introduction to the basic principles of toxicology, and the interactions between toxic agents and living systems. The course consists of a study of general principles, dose response, toxin recognition and evaluation, chemicals, the human environment, and ecological toxicology.

MPHO 651 Health Promotion Theory and Practice (3 Credit Hours)
This course provides public health promotion graduate students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health promotion programs in a variety of settings. The course will help students apply constructs from theories to understand the determinants of health behaviors and emphasizes the importance of addressing health behavior change at the individual, interpersonal, organizational, community and societal levels of the social ecological model.

MPHO 660 Healthcare Informatics (3 Credit Hours)
This course examines the availability, use of interpretation of data obtained from traditional and new data systems used for population health monitoring. Included are public health surveillance systems, vital statistics, hospital discharge data, Health Plan Employer Data and Set (HEDIS), immunization information, school health data, 1996 Health Insurance Portability and Accountability Act (HIPAA), and regulatory agency data related to health.

MPHO 661 Program Planning and Evaluation (3 Credit Hours)
This course provides public and community health graduate students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health programs in a variety of settings.

MPHO 669 Applied Practice Experience (3 Credit Hours)
In this course, students build on their earlier practice activities (i.e., Practice Labs) and undertake an extensive, hands-on activity at a field-based practice site. The Practice Labs, which are completed prior to taking this course, are designed to meet foundational and track competencies as well as prepare students for an on-site work experience.

MPHO 670 Cultural Issues in Health Promotion and Education (3 Credit Hours)
This course provides an introduction for multicultural communication for health promotion and disease management. Topics to be covered include how to work collaboratively in diverse groups with an understanding of health behaviors, values, and health benefits.

MPHO 673 Policy and Politics of Health (3 Credit Hours)
This course enables the student to develop systematic and analytical frameworks for understanding health and healthcare policy issues. It will introduce the policy process, background research necessary for policy implementation, and implementation strategies.

MPHO 680 Global Health Issues (3 Credit Hours)
An examination of the political, social, cultural, and ethical issues for disease prevention and health promotion in developing countries. Students will learn to identify international health prerogatives aimed at improving health status through education and intervention.

MPHO 686 Legal Aspects of Health Services (3 Credit Hours)
This course examines the legal requirements affecting the health care industry, including a survey of the basic concepts and content in the major areas of health law, an explanation and identification of sources of legal authority, and a familiarity with legal language.

MPHO 688 Grant Writing for Public Health Practice (3 Credit Hours)
This course covers issues and problems concerned with the development of grants and contracts as they relate to the health professions. The course focuses on the multiple roles of funding agencies and the importance of matching the interests of the grant seeker with the corresponding funding agency.

MPHO 689 Integrative Learning Experience (3 Credit Hours)
This is the culminating course for the MPH program. Students demonstrate an ability to integrate and synthesize foundational and concentration-specific competencies from their MPH program coursework. Students complete assignments that address timely public health issues culminating in high quality written products and an e-portfolio that demonstrate the analysis, synthesis and intersection of course work and concurrent practicum experiences. Students from all tracks are required to complete this course prior to graduation.

MPHO 690 Leadership (3 Credit Hours)
The emphasis of this course is on the practice of leadership. The course will equip the student with the basic managerial background, fundamentals and theories which will be applicable at any level in management and in leadership positions. Students will be exposed to the interaction of leadership, change, communication and power as seen in the healthcare environment. This course will examine the traits of leading, developing leadership skill, creating a vision, managing conflicts and obstacles in an organization.

MPHO 695 Topics in Public Health (1-3 Credit Hours)
Topics in Public Health.

MPHO 701 Introduction to Healthcare Analytics (3 Credit Hours)
Participants will learn cutting edge strategies for implementing change and achieving high performance in their work environments from recognized healthcare delivery experts.

MPHO 702 Biostatistics II (3 Credit Hours)
This course is a continuation of MPHO 612: Statistical Reasoning for Public Health. This course is designed to train students on regression methods commonly employed in healthcare research. The primary objective of the course is to provide students with the skills necessary to carry out regression analysis and interpret them. The course emphasizes basic and advanced treatment of experimental data and use of analytical frameworks to solve real world problems. While there are some theory and formula derivations, the lectures and homework will focus on more technical aspects and conceptual understanding of fundamental statistical models. SAS will be used to manipulate data into an analyzable form, fit regression models, and perform model diagnostics.

MPHO 703 Programming Tools and Techniques in Data Management (3 Credit Hours)
This course is designed to train students in basic and advanced statistical programming languages R, SAS, and SQL together with techniques and tools necessary for data management and data mining. It will provide you with the skills in the data management process for analytics including data acquisition, cleaning, debugging, and decision making tools through case studies and projects.

MPHO 704 Predictive Data Analysis (3 Credit Hours)
This course introduces the techniques of predictive analytics in the context of a healthcare environment. The aim is to provide students with the highly demanded skills in data analytics and data mining by training them on how to move from data collection to data analysis and how to use data as the basis to predict future outcomes. Topics to be covered include formulating a hypothesis, examining data structure, selecting data, determining and designing appropriate statistical models, evaluating the models and interpreting the results.

MPHO 705 Data Mining and Machine Learning (3 Credit Hours)
This course covers healthcare analytics using data mining and machine learning techniques. Statistical software, R, will be implemented for data exploration and visualization, classification, clustering and time series analysis. Decision trees, nearest neighbor algorithm, artificial neural networks and support vector machine methods will be introduced. Case studies and real-world data will be utilized to leverage data mining and machine learning outcomes.

MPHO 706 Categorical Data Analysis (3 Credit Hours)
This course is designed to prepare the graduate students, health professionals, or fellows to apply statistical methods for analyzing categorical data relevant to healthcare analytics and public health research. The topics to be covered in this course include statistical models (e.g., logistic regression models and loglinear models) for categorical responses. Another emphasis of this course is to demonstrate the statistical methods of categorical data analysis based on real-world data using R and SAS software packages.

MPHO 707 Survival Analysis (3 Credit Hours)
This course is designed to prepare the graduate students, health professionals, or fellows to apply basic methods of statistical analysis for survival (a.k.a. time-to-event) data relevant to clinical and public health research. The major topics to be covered include the Kaplan-Meier product-limit estimation, log-rank and related tests, the Cox regression model, parametric model, power and sample size justification, competing risk analysis, and recurrent event analysis. Interpretation of subsequent analysis results will be stressed. Concepts will be explored through critical review of the biomedical and public health literature, class exercises, two exams, and a data analysis project. Computations will be illustrated using the statistical software package SAS. The course is intended for graduate students and health professionals who will be actively involved in the analysis and interpretation of biomedical research or public health studies generating time-to-event data.

MPHO 710 Implementing Change (3 Credit Hours)
This course gives students the opportunity to learn innovative strategies for implementing change and achieving high performance in their work environments.

MPHO 711 Epidemiology Methods I (3 Credit Hours)
The focus of the course is on an in-depth understanding of epidemiologic concepts and methods learned in a previous introductory course. Including: study designs, measures of disease frequency, measures of association and impact, the role of chance, threats to validity (selection bias, information bias, confounding, interaction), dealing with threats to validity (randomization, restriction, matching, stratification, adjustment, regression, quality assurance and quality control), communicating and disseminating information that pertains to epidemiologic investigations. Students will apply learned concepts and methods through in class exercises, problem sets, and projects.

MPHO 712 Applied Biostatistics (3 Credit Hours)
This course presents modern methods for analyzing data from epidemiologic and public health studies using the latest statistical methods. Emphasis is placed on practical, applied theories/concepts, aspects of methods for the analysis of diverse types of data including from observational studies, and the use of a computer for quantitative data management. Emphasis will also be placed on technical and statistical report writing.

MPHO 713 Applied Statistical Programming (3 Credit Hours)
This course covers programming and computing techniques using contemporary statistical packages. Emphasis is placed on practical issues relating to organizing, modifying, and preparing data for analysis.

MPHO 715 Current Issues in Epidemiology (3 Credit Hours)
Discussions with experts experienced in the diverse applications of epidemiology in current research and practice. Emphasis on emerging infectious diseases, environmental and occupational health, chronic diseases and community intervention trials. Lectures, discussions, class presentations and development of research project.

MPHO 716 Application of Epidemiological Methods (3 Credit Hours)
The course aims to prepare graduate students with hands-on experience in producing common epidemiological measures while critically evaluating the quality of data and the design of epidemiological investigations.

MPHO 717 Epidemiology of Infectious Diseases (3 Credit Hours)
This course focuses on the epidemiology of infectious diseases from a public health perspective. It applies traditional and contemporary epidemiological methods used to deal with infectious diseases.

MPHO 718 Epidemiologic Methods II (3 Credit Hours)
This course provides an intermediate discussion of public health surveillance and an introduction of survival analysis approaches. Key content will include a review of the updated guidelines for evaluating public health surveillance systems, information systems, types of surveillance, and special topics in surveillance [e.g., syndromic surveillance, geographic information systems (GIS), and global health surveillance systems]. Additional topics using SAS will include nonparametric survival function estimation, estimating parametric regression and Cox regression models, and competing risks. Individual and group learning activities include journal reviews and syntheses, case studies, SAS dataset analyses and reports, and a comprehensive final exam.

MPHO 721 Healthcare Strategy (3 Credit Hours)
This course is designed to help students learn about essential aspects of strategic planning and strategic management in the context of healthcare service organizations. Students will acquire an enhanced understanding of the complex U.S. healthcare system, apply planning concepts to formulate mission and vision statements, and formulate goals and objectives as part of a strategic plan. The course content will also address aspects of organizational leadership, along with the importance of implementation and monitoring progress to achieve continuous quality improvement and to 'close the loop' with strategic planning initiatives.

MPHO 723 Policy and Politics of Health (3 Credit Hours)
This course is an introduction to policy process, frameworks for understanding health policy issues, background research necessary for policy implementation and implementation strategies.

MPHO 727 Organizational Management (3 Credit Hours)
This course examines issues and principles in the management of individuals, groups and organizations. Topics includes motivation and rewards systems, group dynamics and organizational design and change.

MPHO 733 Financing Healthcare (3 Credit Hours)
Students examine financial evaluation of the healthcare industry, the source of funds and effects of changing patient policies. Other topics of interest will be financial strategies, budgets and capital outlay.

MPHO 736 Conflict Analysis and Negotiations (3 Credit Hours)
This course will provide students with advanced knowledge and skills in the theory of conflict analysis and resolution and negotiations, including but not necessarily limited to: skill development and collaborative problem solving at the individual, group, and organizational level; conceptual and practical skills in negotiation that are essential for managers; and third-party conflict intervention, which can assume several forms such as fact-finding, conciliation, mediation, and arbitration.

MPHO 737 Infectious and Chronic Disease Epidemiology (3 Credit Hours)
This 3-credit hour course is offered to Epidemiology Track students as a required course and to Masters of Public Health students in the remaining tracks as an elective course. This course is focused on substantive areas in epidemiology with an emphasis on ‘infectious disease epidemiology’ and ‘chronic disease epidemiology’. The course gives the introductory scientific and biomedical theories of modern public health problems and explores mechanisms and models of the major categories of disease.

MPHO 750 Community Practicum (3 Credit Hours)
This course is an opportunity to apply knowledge and skills gained in academic courses in a working environment or community setting under the supervision of a preceptor. This course requires a written report to the preceptor and the course director as well as oral presentation.

MPHO 772 International Health Exchange Program (3 Credit Hours)
This course exposes students to important issues in international public health and is unique in that it involves the analysis of health problems in the broad social, cultural, economic and political contexts that generate and sustain them.

MPHO 776 Global Health (3 Credit Hours)
This course introduces students to the political, social, cultural, environmental, and ethical issues globally involved in disease prevention and health promotion. Specific emphasis is on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course also identifies global health prerogatives aimed at improving health status through education and intervention.

MPHO 778 Global Environmental Health (3 Credit Hours)
The goal of this course is to guide students with a public health perspective to develop skills to identify and analyze environmental health problems globally. It is designed to provide knowledge on recognizing and evaluating major environmental health issues and risk factors in developed and developing countries by using group discussions and real-life case studies.

MPHO 779 Intro to Research Methods (3 Credit Hours)
The goal of this course is to provide practical, step-by-step guidance in the research process. The organizing framework used is the scientific method, which is applied to current health initiatives. Students develop a unique research design proposal.

MPHO 784 Creating Sustainable Environmental Futures (3 Credit Hours)
This second-year MPH course examines the interrelationships between individual and societal decisions and the global environment, and the consequences these interrelationships have for public health. Students engage in an in-depth examination of key environmental health issues, analyze the public health implications, and consider various strategies for improving individual and population health, and enhancing sustainability, in the local area, the region, the nation and around the world.

MPHO 998 Master's Graduate Credit (1 Credit Hour)
This course is a pass/fail course for master's students in their final semester. It may be taken to fulfill the registration requirement necessary for graduation. All master's students are required to be registered for at least one graduate credit hour in the semester of their graduation.