

Competency Menu

Foundational Public Health Knowledge Learning Objectives

COPH 5003: Introduction to Public Health

- Explain public health history, philosophy and values
 - Identify the core functions of public health and the 10 Essential Services¹
 - Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
 - List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program
 - Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
 - Explain the critical importance of evidence in advancing public health knowledge
 - Explain effects of environmental factors on a population's health
 - Explain biological and genetic factors that affect a population's health
 - Explain behavioral and psychological factors that affect a population's health
 - Explain the social, political and economic determinants of health and how they contribute to population health and health inequities
 - Explain how globalization affects global burdens of disease
 - Explain an ecological perspective on the connections among human health, animal health and ecosystem health (eg, One Health)
 - Select communication strategies for different audiences and sectors
 - Communicate audience-appropriate public health content, both in writing and through oral presentation
-

MPH Foundational Competencies

EPID 5112: Epidemiology 1

- Apply epidemiological methods to the breadth of settings and situations in public health practice
- Select quantitative and qualitative data collection methods appropriate for a given public health context
- Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
- Interpret results of data analysis for public health research, policy or practice
- Apply systems thinking tools to a public health issue

ENVH 5102: Environmental and Occupational Health

- Apply awareness of cultural values and practices to the design or implementation of public health policies or programs
- Design a population-based policy, program, project or intervention
- Advocate for political, social or economic policies and programs that will improve health in diverse populations
- Evaluate policies for their impact on public health and health equity

BIOS 5013: Biostatistics 1

- Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
- Interpret results of data analysis for public health research, policy or practice

HBHE 5104: Health Behavior and Health Education

- Select quantitative and qualitative data collection methods appropriate for a given public health context
- Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels
- Select methods to evaluate public health programs
- Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes
- Apply negotiation and mediation skills to address organizational or community challenges
- Describe the importance of cultural competence in communicating public health content
- Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate

HPMT 5103: The Health Care System

- Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings
 - Assess population needs, assets and capacities that affect communities' health
 - Explain basic principles and tools of budget and resource management
 - Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence
 - Advocate for political, social or economic policies and programs that will improve health in diverse populations
 - Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making
-

MPH Program Competencies

Concentration in Environmental Health Sciences

ENVH 5202: Applied Knowledge in Environmental Health

- Assess potential chemical hazards in the environment and approaches to control them
- Assess major physical hazards in the environment and approaches to control them.

ENVH 5404: Public Health Microbiology

- Assess potential biological hazards in the environment and approaches to control them.
- Synthesize and break down the science underlying major public health issues from multiple sources.

ENVH 5302: Principles of Toxicology in Public Health

- Illustrate appropriate use of hazard analysis and risk assessment concepts.

Concentration in Biostatistics

BIOS 5212: Biostatistics II: Advanced Linear Models

- Evaluate statistical associations based on multivariate methods.
- Choose the appropriate assumptions of fundamental linear models.
- Evaluate hypothesis tests for comparing two or more groups with respect to a covariate.

BIOS 5213: Biostatistics Computing with SAS I

- Produce computer code for data management and statistical analyses

BIOS 5223 Biostatistics III: Multivariate Analysis & Linear Models

- Examine graphical displays of data that accompany statistical analysis.

Concentration in Epidemiology

EPID 5322:Epidemiology II

- Evaluate the appropriateness of epidemiologic study designs.
- Critically examine and synthesize epidemiologic, and scientific literature then properly interpret results.
- Analyze and apply the principles of validity, reliability, confounding and biases in epidemiology.

EPID 53334: Epidemiology III

- Engage in appropriate epidemiological analytical approaches and properly interpret results.

EPID 5573:Data Management & Programming for Epidemiologists

- Illustrate required skill needed to access, manage and analyze epidemiological data.

Concentration in Health Behavior and Health Education

HBHE 5225: Theories of Health Behavior and Health Education

- Demonstrate how to apply major health behavior and health education theories that are utilized in public health practice.
- Apply major health behavior and health education theories to the design of culturally appropriate health promotion and disease prevention strategies.

HBHE 5105: Introduction to Research Methods in Public Health

- Debate the effect of cultural competence on qualitative and quantitative approaches used in the study of health disparities.
- Evaluate evidence-based information for behavioral/educational policies/programs.

COPH 5421: Rural and Global Health Evaluation and Impact Assessment

- Decide the components and process of designing an appropriate program evaluation for a public health problem.

Concentration in Health Policy and Management

HPMT 5132: Introduction to Health Policy and Politics

- Assess the effect of health policy on providers, payers, and populations.
- Appraise the role of the major U.S. political institutions in health policy and politics.

HPMT 5203: Public Health Law and Ethics

- Critically analyze state government interventions for appropriate exercise of authority.
- Evaluate public health programs to determine if they impermissibly discriminate between individuals and/or groups.

HPMT 5104: Introduction to Health Economics

- Evaluate the equity and efficiency of public policies using economic principles.

Concentration in Rural Global Public Health

COPH 5146: Rural and Global Public Health Practice

- Assess the successes and failures of national public health systems in rural versus urban settings.
- Develop a plan that uses global insight to address a local public health issue.

COPH 5148: Health Numeracy

- Apply principles of health numeracy and journalistic nonfiction in public health narrative.
- Develop recommendations about how basic health numeracy principles should be used in applied health communication settings.

COPH 5140: History and Theory of Public Health

- Evaluate the differential impact of disease outbreaks in frontier, rural and urban settings.
-

MS Program Competencies

Master of Science (MS) in Healthcare Data Analytics

HPMT 5335: Data Mining in Healthcare

- Apply predictive analytic methods on healthcare data and interpret results of the analysis.

BMIG 6012: Database Systems and Data Warehouse Design

- Illustrate required skills needed to access and manage data using SQL.

HPMT 5212: Healthcare Information Systems for Administrators

- Apply forecasting methods to inform decision-making in healthcare.

HPMT 5334: Data Visualization for Healthcare Analytics

- Construct appropriate data visualizations using healthcare data.

HPMT 5214: Decision Analytics in Healthcare

- Apply forecasting methods to inform decision-making in healthcare.

DrPH Foundational Competencies

COPH 6500: Current Issues in Public Health

- Explain the use and limitations of surveillance systems and national surveys in assessing, monitoring and evaluating policies and programs and to address a population's health
- Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners
- Integrate knowledge, approaches, methods, values and potential contributions from multiple professions and systems in addressing public health problems
- Create a strategic plan
- Create organizational change strategies
- Assess one's own strengths and weaknesses in leadership capacities including cultural proficiency
- Propose human, fiscal and other resources to achieve a strategic goal
- Cultivate new resources and revenue streams to achieve a strategic goal
- Design a system-level intervention to address a public health issue
- Propose interprofessional team approaches to improving public health

COPH 6303: Community-Based Public Health Policy and Management

- Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community and population) levels
- Propose strategies to promote inclusion and equity within public health programs, policies and systems
- Integrate knowledge of cultural values and practices in the design of public health policies and programs

EPID 6001: Instructional Methods and Teaching Practicum

- Assess an audience's knowledge and learning needs
- Deliver training or educational experiences that promote learning in academic, organizational or community settings
- Use best practice modalities in pedagogical practices

EPID 6401:Advanced Public health Practice

- Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies

HPMT 6114: Advanced Public Health Policy

- Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community and population) levels
- Propose strategies to promote inclusion and equity within public health programs, policies and systems
- Integrate knowledge of cultural values and practices in the design of public health policies and programs
- Integrate scientific information, legal and regulatory approaches, ethical frameworks and varied stakeholder interests in policy development and analysis

HBHE 6120: Introduction to Mixed Methods Research Design

- Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community and population) levels
- Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue

HBHE 6436: Communication for Public Health Leaders

- Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies
-

DrPH Program Competencies

COPH 6500: Current Issues in Public Health

- Evaluate leadership best practices that should be employed on the range of public health interventions to address a given public health issue
- Create and describe in a public presentation a response plan to be implemented by public health leaders in the event of a public health crisis.

HBHE 6436: Communications for Public Health Leaders

- Create a diverse community coalition utilizing best practice communication strategies.

EPID 6401: Advanced Public Health Practice

- Evaluate organizational leadership responsibilities and community service roles of a centralized state public health agency

HPMT 6203: Public Health Law and Ethics

- Debate alternative approaches and select the appropriate legal authority supporting government interventions and contrast and compare this authority with individual rights and freedoms in a public health setting.

Doctor of Philosophy In Epidemiology Program Competencies

EPID 6424: Advanced Epidemiologic Methods

- Critically appraise the scientific epidemiologic literature.
- Solve epidemiologic or public health problems using advanced epidemiologic theory and methods.

COPH 6437: Grantsmanship and the Peer Review Process

- Create a grant proposal for an epidemiologic study with the appropriate study design and methods.

EPID 6001: Instructional Methods and Teaching Practicum

- Design and deliver a class session in a course in epidemiology while demonstrating proficiency in critical pedagogical concepts.

EPID 6336: Observational Study Designs

- Assess complex epidemiologic information in oral and written form.

Doctor of Philosophy in Health Promotion and Prevention Research Program Competencies

HBHE 6212: Applied Behavioral Research Methods

- Critically appraise theory-based and evidence-based interventions designed to promote health and/or prevent disease.
- Create and defend in an oral presentation an original research question, significance and methods for original health promotion and prevention research.

COPH 6303: Community-Based Program Design

- Build a community-based public health program upon relevant theory and evidence and incorporate the social ecological model.

HBHE 6120: Introduction to Mixed Methods Research

- Design methodologically sound mixed methods research to promote health or prevent disease.

HBHE 6021: Advanced Health Behavioral Theory

- Evaluate the relative strengths and limitations of major theories and concepts that are utilized in behavioral approaches to health promotion and disease prevention.

Doctor of Philosophy in Health Systems and Services Research Program Competencies

HPMT 6213: Variation in Health System Performance

- Assess how environmental context affects variation in health system outcomes.

HPMT 6103: Health Systems Theory and Research

- Create conceptual frameworks to guide health services research studies.

HPMT 6323: Advanced Econometric Methods and Special Topics

- Evaluate HSR issues using appropriate analytical techniques.

COPH 6437: Grantsmanship and the Peer Review Process

- Formulate and present a health services research study plan in a grant proposal.

HPMT 6114: Advanced Public Health Policy & Management

- Defend selection of policy solutions through multiple modalities for diverse audiences.