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Identifier	**CEPH Foundational Competencies**	**MPH Course Where Competency is Addressed/Assessed**
Evidence-based Approaches to Public Health		
MPH 1	Apply epidemiological methods to settings and situations in public health practice	EPID 6630
MPH 2	Select quantitative and qualitative data collection methods appropriate for a given public health context	EPID 6630 CBHS 6610
MPH 3	Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	BIOS 6601 CBHS 6610
MPH 4	Interpret results of data analysis for public health research, policy or practice	BIOS 6601
Public Health and Health Care Systems		
MPH 5	Compare the organization, structure, and function of health care, public health and regulatory systems across national and international settings	HSMP 6601
MPH 6	Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and systemic levels	CBHS 6610
Planning and Management to Promote Health		
MPH 7	Assess population needs, assets and capacities that affect communities' health	CBHS 6610
MPH 8	Apply awareness of cultural values and practices to the design, implementation, or critique of public health policies or programs	CBHS 6610
MPH 9	Design a population-based policy, program, project or intervention	CBHS 6610
MPH 10	Explain basic principles and tools of budget and resource management	HSMP 6601
MPH 11	Select methods to evaluate public health programs	CBHS 6610
Policy in Public Health		
MPH 12	Discuss the policy-making process, including the roles of ethics and evidence	HSMP 6601
MPH 13	Propose strategies to identify relevant communities and individuals and build coalitions and partnerships for influencing public health outcomes	CBHS 6610

MPH 14	Advocate for political, social or economic policies and programs that will improve health in diverse populations	HSMP 6601
MPH 15	Evaluate policies for their impact on public health and health equity	HSMP 6601
Leadership		
MPH 16	Apply leadership and/or management principles to address a relevant issue	HSMP 6601
MPH 17	Apply negotiation and mediation skills to address organizational or community challenges	PUBH 6600
Communication		
MPH 18	Select communication strategies for different audiences and sectors	EHOH 6614
MPH 19	Communicate audience-appropriate public health content, both in writing and through oral presentation to a non-academic, non-peer audience with attention to factors such as literacy and health literacy	EHOH 6614
MPH 20	Describe the importance of cultural humility in communicating public health content	PUBH 6600
Interprofessional Practice		
MPH 21	Integrate perspectives from other sectors and/or professions to promote and advance population health	PUBH 6600 PUBH 6606
Systems Thinking		
MPH 22	Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative	EHOH 6614

Identifier	MPH Applied Analytics, Informatics and AI Concentration (AAI) Competencies Concentration/Competencies Effective Summer/Fall 2027	Course Where Competency is Addressed/Assessed
MPH-AAI 1	Translate a study's scientific question or aims into testable statistical hypotheses and propose and apply appropriate statistical methods to test those hypotheses.	BIOS 6602 BIOD 6612
MPH-AAI 2	Fit and interpret models for continuous outcome data (normal linear model), categorical outcome data (logistic regression), time-to-event data (Cox regression) and predictive modeling approaches (e.g. machine learning).	BIOS 6623
MPH-AAI 3	Apply concepts of multiple regression and machine learning, including confounding, statistical interactions, model selection, model fit including predictive modeling, and regression diagnostics, in fitting and evaluating statistical models.	BIOS 6602 BIOS 6612 BIOS 6623
MPH-AAI 4	Apply scientific and statistical principles of sampling, bias, confounding, and sample size estimation to design or interpret basic public health or biomedical studies.	BIOS 6623
MPH-AAI 5	Use computer software for data management and data wrangling (data entry, access, and data manipulations), as well as for summarizing, analyzing and displaying research results	BIOS 6644
MPH-AAI 6	Use the principles of hypothesis testing and estimation of population parameters to draw inferences from quantitative data and communicate orally and in writing those inferences and their statistical and scientific interpretation to non-statistical scientists.	BIOS 6623

Identifier	MPH Applied Biostatistics Concentration (BIOS) Competencies	Course Where Competency is Addressed/Assessed
MPH-BIOS 1	Translate a study's scientific question or aims into testable statistical hypotheses and propose and apply appropriate statistical methods to test those hypotheses.	BIOS 6602
MPH-BIOS 2	Fit and interpret models for continuous outcome data (normal linear model), categorical outcome data (logistic regression), and time-to-event data (Cox regression).	BIOS 6602
MPH-BIOS 3	Apply concepts of multiple regression, including confounding, statistical interactions, model selection, model fit, and regression diagnostics, in fitting and evaluating statistical models.	BIOS 6602
MPH-BIOS 4	Apply scientific and statistical principles of sampling, bias, confounding, and sample size estimation to design or interpret basic public health or biomedical studies.	BIOS 6623
MPH-BIOS 5	Use computer software for data management (data entry, access, and data manipulations), as well as for summarizing, analyzing and displaying research results	BIOS 6680
MPH-BIOS 6	Use the principles of hypothesis testing and estimation of population parameters to draw inferences from quantitative data and communicate orally and in writing those inferences and their statistical and scientific interpretation to non-statistical scientists.	BIOS 6623

Identifier	MPH Community and Behavioral Health Concentration (CBHS) Competencies	Course Where Competency is Addressed/Assessed
MPH-CBHS 1	Critically analyze, develop, and apply theories, models, and frameworks to inform public health practice.	CBHS 6613
MPH-CBHS 2	Apply systematic approaches/methods and collaborate with communities and other interested parties – in an effective, equitable, and ethical manner – to develop and implement an assessment of the health-related needs and assets of communities and populations, taking into account individual, interpersonal, community and societal factors.	CBHS 6624
MPH-CBHS 3	Use scientific evidence and community experience to identify health inequities and inform the design or adaptation of culturally relevant programs to promote health equity.	CBHS 6613
MPH-CBHS 4	Use systematic approaches to design or adapt, implement, and evaluate health promotion or disease prevention programs.	CBHS 6613
MPH-CBHS 5	Develop a comprehensive evaluation plan to assess the implementation and effectiveness of a public health program or policy.	CBHS 6612
MPH-CBHS 6	Conduct, interpret, and report the results of quantitative or qualitative analyses to understand factors associated with health or health behavior.	CBHS 6622 CBHS 6637

Identifier	MPH Community and Behavioral Health Concentration (CBHS) Competencies Concentration/Competencies Effective Summer/Fall 2027	Course Where Competency is Addressed/Assessed
MPH-CHS 1	Conduct, interpret, and report the results of qualitative analyses to understand factors associated with health or health behavior.	CBHS 6622
MPH-CHS 2	Conduct, interpret, and report the results of quantitative analyses to understand factors associated with health or health behavior.	CBHS 6637
MPH-CHS 3	Use scientific evidence and community experience to identify health inequities and inform the design or adaptation of culturally relevant programs to promote health equity.	CBHS 6613
MPH-CHS 4	Use systematic approaches to design or adapt, implement, and evaluate health promotion or disease prevention programs.	CBHS 6613
MPH-CHS 5	Develop a comprehensive evaluation plan to assess the implementation and effectiveness of a public health program or policy.	CBHS 6612
MPH-CHS 6	Utilize project management tools to design plans, budgets, and coordination strategies for community-engaged public health initiatives.	CBHS 6656

Identifier	MPH Environmental and Occupational Health Concentration (EHOH) Competencies	Course Where Competency is Addressed/Assessed
MPH-EHOH 1	Apply skills in exposure assessment to evaluate the potential for health effects from environmental or occupational chemical, physical, biological, or psychosocial stressors.	EHOH 6619
MPH-EHOH 2	Recognize sources and exposure pathways for environmental or occupational chemical, physical, biological, or psychosocial stressors.	EHOH 6619
MPH-EHOH 3	Apply analytical skills in the evaluation of environmental or occupational health problems.	EHOH 6618
MPH-EHOH 4	Explain the principles of resilience and apply these principles in the development of solutions to environmental, climate-related, or occupational health problems.	EHOH 6618
MPH-EHOH 5	Apply theoretical frameworks or empirical evidence to recommend interventions to improve the health, safety, or well-being of workers.	EHOH 6618
MPH-EHOH 6	Evaluate toxicological effects associated with exposures and stressors, considering chemical properties and biological mechanisms.	EHOH 6616
MPH-EHOH 7	Recommend strategies to promote environmental justice.	EHOH 6618

Identifier	MPH Environment, Climate and Health Concentration (ECH) Competencies	Course Where Competency is Addressed/Assessed
MPH-ECH 1	Use scientific evidence to evaluate the potential health effects of environmental, climate, or workplace exposures	EHOH 6616
MPH-ECH 2	Identify the sources and routes of exposure to chemical, physical, biological, or psychosocial stressors in communities or workplaces	EHOH 6619
MPH-ECH 3	Identify populations that face disproportionate risks from climate, environmental and workplace exposures and recommend strategies to build resilience and reduce harms in these populations	EHOH 6635
MPH-ECH 4	Recommend interventions to improve the health, safety, or well-being of workers using theoretical frameworks and empirical evidence	EHOH 6618
MPH-ECH 5	Analyze the potential impacts of climate, environmental or workplace policies on human health, environmental sustainability and health equity	EHOH 6618
MPH-ECH 6	Communicate the impacts of environmental, climate or workplace hazards on human health using evidence-based strategies	EHOH 6635

Identifier	MPH Epidemiology Concentration (EPID) Competencies	Course Where Competency is Addressed/Assessed
MPH-EPID 1	Compare and prioritize public health issues within and across populations, using epidemiologic methods including measures of prevalence, incidence, morbidity, mortality, demographic characteristics and risk factors.	EPID 6631
MPH-EPID 2	Critically review and evaluate public health and other scientific literature to identify gaps in evidence, assess the strengths and weaknesses, and identify threats to validity of peer-reviewed studies as relevant to the practice of public health.	EPID 6626
MPH-EPID 3	Formulate an answerable research question, specific aims and hypotheses to advance knowledge for a public health issue.	EPID 6626
MPH-EPID 4	Use computer software for data entry, database management, and summarizing, analyzing and displaying data.	BIOS 6680
MPH-EPID 5	Apply and interpret the concepts of effect modification, confounding, and bias in research design and analysis approaches.	BIOS 6602

Identifier	MPH Health Systems Management and Policy Concentration (HSMP) Competencies	Course Where Competency is Addressed/Assessed
MPH-HSMP 1	Evaluate strategies for organizing, financing and delivering health services.	HSMP 6604
MPH-HSMP 2	Develop strategies for improving the performance of public health and healthcare organizations.	HSMP 6606 HSMP 6633
MPH-HSMP 3	Apply principles of budgeting and financial decision analysis in public health and healthcare settings.	HSMP 6610
MPH-HSMP 4	Analyze the implementation of laws, regulations, and policies to identify opportunities for improving health and health equity.	HSMP 6605
MPH-HSMP 5	Apply policy analysis frameworks to make evidence-informed policy recommendations for improving health and health equity.	HSMP 6616
MPH-HSMP 6	Develop policy recommendations for dismantling structural and contextual barriers to health using relevant frameworks and ethical principles.	HSMP 6602

Identifier	MPH Global Health Plus Concentration (GLH) Competencies	Course Where Competency is Addressed/Assessed
MPH-GLH 1	Provide a comprehensive analysis of a significant public health program or policy success that has been achieved in a low- or middle-income country.	CBHS 6619
MPH-GLH 2	Recommend professional, ethical, and cultural responses to public health issues that may be encountered in a global health setting.	EPID 6634
MPH-GLH 3	Apply concepts of global burden of disease, especially disability-adjusted life years, across national and international settings to address health challenges.	CBHS 6619
MPH-GLH 4	Compare a public health issue in different regions around the world and how the physical or human geography in these regions impacts the public health issue.	EHOH 6623
MPH-GLH 5	Analyze how the health care or public health system in an international setting addresses a public health issue.	HSMP 6618

Identifier	MPH Leadership and Public Health Practice Concentration (LPHP) Competencies	Course Where Competency is Addressed/Assessed
MPH-LPHP 1	Use a health equity lens to develop an implementation plan for public health laws, regulations, or policies.	HSMP 6640
MPH-LPHP 2	Create a personal development plan, including an achievable mission, set of core values and vision, and use these to guide personal and professional action.	CBHS 6640
MPH-LPHP 3	Apply a systems thinking framework to evaluate issues internal and external to an organization that may impact the delivery of essential public health services and suggest potential solutions.	CBHS 6640
MPH-LPHP 4	Apply appropriate leadership frameworks and styles to organizational team-building and decision-making.	CBHS 6640
MPH-LPHP 5	Develop a comprehensive evaluation plan to assess the implementation and effectiveness of a public health program or policy.	CBHS 6612
MPH-LPHP 6	Apply principles of strategic planning, management and budgeting to organizational or community settings.	HSMP 6634

Identifier	MPH Maternal and Child Health Concentration (MCH) Competencies	Course Where Competency is Addressed/Assessed
MPH-MCH 1	Evaluate how health disparities, inequities and racism impact MCH programs, services and practices.	CBHS 6621
MPH-MCH 2	Select and interpret existing data sources to compare and contrast the health of MCH populations across different regions and countries.	EPID 6644
MPH-MCH 3	Develop a comprehensive evaluation plan to assess the implementation and effectiveness of a public health program or policy.	CBHS 6612
MPH-MCH 4	Interpret state or national performance measures to evaluate public health programs or services and provide recommendations.	HSMP 6614
MPH-MCH 5	Critically analyze the efficacy of current evidence-based methods, programs or policies in the development and delivery of MCH services or interventions using available academic, program evaluation or legislative reports.	CBHS 6621
MPH-MCH 6	Apply lifecourse and other relevant theories to maternal and child health policy development.	HSMP 6614

Identifier	MPH Population Mental Health and Wellbeing Concentration (PMHW) Competencies	Course Where Competency is Addressed/Assessed
MPH-PMHW 1	Demonstrate thorough understanding of prevalence rates, risk and protective factors, and the vulnerabilities and strengths in communities to mental health and substance disorders.	PMHW 6601
MPH- PMHW 2	Critically evaluate the theoretical constructs of well-being in the promotion of mental health and prevention of substance use.	PMHW 6621
MPH- PMHW 3	Develop a policy brief to reflect the impact of behavioral health policies related to integrated health care systems.	PMHW 6620
MPH- PMHW 4	Develop a comprehensive evaluation plan to assess the implementation and effectiveness of a public health program or policy.	CBHS 6612
MPH- PMHW 5	Analyze the individual, social, cultural, and structural factors that uniquely relate to effective prevention and treatment strategies of major mental health and substance use disorders.	PMHW 6601

Identifier	MPH Community Health Education Concentration (CHE) Competencies	Course Where Competency is Addressed/Assessed
MPH-CHE 1	Examine the accessibility of community health resources and services from a health equity lens and analyze how access impacts individual and community health.	CHBH 5350
MPH-CHE 2	Explain how cultural beliefs and practices both positively and negatively influence participation in community health initiatives.	CHBH 6100 CHBH 5350
MPH-CHE 3	Synthesize knowledge of community health education and public health to illustrate best practices for effective community engagement.	CHBH 5350
MPH-CHE 4	Apply public health theoretical concepts or models to create a community health initiative that includes a logic model for aligning the mission, goals and measurable process, outcome and impact objectives of the initiative.	CHBH 6100
MPH-CHE 5	Apply cultural theories and frameworks when working with community groups/stakeholders on a community-engaged initiative.	CHBH 5350 CHBH 6150

Identifier	MPH Animals People and Environment Concentration (APE) Competencies	Course Where Competency is Addressed/Assessed
MPH-APE 1	Assess the public health threat of emerging issues to animal and human populations and identify intervention strategies.	PBHC 5400
MPH-APE 2	Analyze how social, political and cultural differences can impact public perceptions about how human, environment and animal interactions affect public health.	PBHC 5400
MPH-APE 3	Analyze ways in which agricultural and human incursion positively and adversely impact environmental and ecological health.	PBHC 5400
MPH-APE 4	Develop strategies for optimal communication and collaboration between human, animal, and health professionals	PBHC 5400
MPH-APE 5	Incorporate the principles of safe and secure food systems into public health problem solving.	FTEC 5740
MPH-APE 6	Develop a resource that communicates a Team Science method or concept to be used by a cross-disciplinary team working in the context of One Health or Public Health.	PBHC 6450

Identifier	MPH Community Health Promotion Concentration (CHP) Competencies	Course Where Competency is Addressed/Assessed
MPH-CHP 1	Assess the relationships between underlying health issues (e.g. poverty, trauma and discrimination) and health outcomes to improve policy, systems or environmental norms that support health promotion for priority populations	ERHS 5600
MPH-CHP 2	Critically assess the scientific literature to inform health promotion research and practice for priority populations	PBHC 6500
MPH-CHP 3	Determine an appropriate evidence and theory base for the design of a stakeholder-engaged health promotion intervention	PBHC 6500
MPH-CHP 4	Apply a mixed methods evaluation approach to health promotion research and/or practice	PBHC 6650
MPH-CHP 5	Propose population-level solutions that consider biological processes, health disparities, and the social determinants of health, to improve health outcomes	ERHS 5010
MPH-CHP 6	Design a Health Impact Assessment methodology to evaluate impacts on population health disparities	ERHS 5600

Identifier	MPH Epidemiology Concentration (EPID) Competencies - CSU	Course Where Competency is Addressed/Assessed
MPH-EPID 1	Compare and prioritize public health issues within and across populations, using epidemiologic methods including measures of prevalence, incidence, morbidity, mortality, demographic characteristics and risk factors.	ERHS 6400
MPH-EPID 2	Critically review and evaluate public health and other scientific literature to identify gaps in evidence, assess the strengths and weaknesses, and identify threats to validity of peer-reviewed studies as relevant to the practice of public health.	PBHC 5750
MPH-EPID 3	Formulate an answerable research question, specific aims, and hypotheses to advance knowledge for a public health issue.	PBHC 5750
MPH-EPID 4	Use computer software for data entry, database management and summarizing, analyzing and displaying data.	PBHC 5340
MPH-EPID 5	Apply and interpret the concepts of effect modification, confounding, and bias in research design and analysis approaches.	PBHC 6600

Identifier	MPH Global Health and Health Disparities Concentration (GHHD) Competencies	Course Where Competency is Addressed/Assessed
MPH-GHHD 1	Analyze major causes of morbidity and mortality around the world, and how the risk of disease varies with region.	PBHC 6922-001
MPH-GHHD 2	Examine the roles and relationships of the entities (such as NGOs, national governmental agencies, and international organizations) influencing global health and health equity.	PBHC 6922-001
MPH-GHHD 3	Analyze strategies to engage marginalized and vulnerable populations in making decisions that affect their health and well-being.	PBHC 6922-002
MPH-GHHD 4	Assess major public health efforts to reduce health disparities in locally or globally.	PBHC 6922-001
MPH-GHHD 5	Describe social justice and human rights principles in addressing public health problems globally.	PBHC 6922-002
MPH-GHHD 6	Critique a current health intervention in global health applying concepts of decolonization and propose recommendations for future global health interventions.	PBHC 6922-002
MPH-GHHD 7	Design an evaluation plan for a population-based policy, program or project.	HESC 6500

Identifier	MPH Health Communication Concentration (HCOM) Competencies	Course Where Competency is Addressed/Assessed
MPH-HCOM 1	Analyze theory and strategy-based communication principles across different settings for public health practice.	SPCM 5380 SPCM 6390
MPH-HCOM 2	Create a positioning strategy for a communication-based public health intervention applying best practices of message production and delivery for a target audience.	JTCM 6140
MPH-HCOM 3	Identify and analyze fundamental properties of the intended audience for a communication-based intervention, including demographic, psychological, sociological and cultural elements at all levels from interpersonal to mass.	JTCM 6140
MPH-HCOM 4	Assess the critical relationship between formative and evaluative research in the ongoing delivery of a communication-based intervention.	JTCM 6140
MPH-HCOM 5	Develop a communication plan to reach relevant professional groups, the public, or policy-makers.	JTCM 6140
MPH-HCOM 6	Create a website to communicate about a health condition, policy, program, or practice.	JTCM 6300

Identifier	MPH Physical Activity and Healthy Lifestyles Concentration (PAHL) Competencies	Course Where Competency is Addressed/Assessed
MPH-PAHL 1	Use public health data to prioritize community-based interventions aimed at promoting physical activity or other healthy lifestyle behaviors.	HESC 6500
MPH-PAHL 2	Utilize a field-specific assessment tool to measure physical activity and healthy lifestyle behaviors, as well as their supports and barriers, for population health and wellness.	PBHC 6440
MPH-PAHL 3	Apply evidence-based physical activity promotion approaches to the design or evaluation of community health promotion programs.	PBHC 6440
MPH-PAHL 4	Assess community built environment infrastructure for accessibility to physical activity and healthy lifestyle resources.	PBHC 6440
MPH-PAHL 5	Describe the effects of physical activity on primary, secondary and tertiary prevention of various chronic diseases in populations.	PBHC 6440
MPH-PAHL 6	Propose strategies for incorporating diverse community values, beliefs, and cultures in physical activity or healthy lifestyle promotion programs.	PBHC 6440
MPH-PAHL 7	Design an evaluation plan for a population-based policy, program or project.	HESC 6500
MPH-PAHL 8	Develop a communication plan to reach relevant professional groups, the public, or policy-makers.	JTCM 6140

Identifier	MPH Public Health Nutrition Concentration (PHNU) Competencies	Course Where Competency is Addressed/Assessed
MPH-PHNU 1	Critically review and evaluate public health nutrition literature to identify strengths and weaknesses of individual studies and assess for overall strength of evidence.	FSHN 6400
MPH-PHNU 2	Explain the effect different dietary patterns have on the primary, secondary, and tertiary prevention of various chronic diseases such as obesity, diabetes, coronary heart disease, cancer and others.	FSHN 5300
MPH-PHNU 3	Assess dietary intake using nutrition assessment tools for population-level analysis.	FSHN 6400
MPH-PHNU 4	Apply a program design framework, such as a logic model, to a public health nutrition intervention.	FSHN 5250
MPH-PHNU 5	Select and apply appropriate theories and evidence-based strategies for the development of nutrition promotion, disease prevention, or disease management.	FSHN 5250
MPH-PHNU 6	Develop an evidence-based evaluation strategy for a public health nutrition program.	FSHN 6200

Identifier	Core (CR) DrPH Competencies	Course Where Competency is Addressed/Assessed
Data & Analysis		
DrPH 1	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	CBHS 7670 EHOH 7631
DrPH 2	Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue	EPID 7912
DrPH 3	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	PUBH 6842 #1
Leadership, Management & Governance		
DrPH 4	Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners	HSMP 7603
DrPH 5	Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies	EHOH 7402
DrPH 6	Integrate knowledge, approaches, methods, values and potential contributions from multiple professions, sectors and systems in addressing public health problems	PUBH 6842 #1
DrPH 7	Create a strategic plan	HSMP 7603
DrPH 8	Facilitate shared decision making through negotiation and consensus-building methods	CBHS 7020
DrPH 9	Create organizational change strategies	CBHS 7020
DrPH 10	Propose strategies to promote inclusion and equity within public health programs, policies and systems	PUBH 6842 #3
DrPH 11	Assess one's own strengths and weaknesses in leadership capacities, including cultural proficiency	CBHS 7020
DrPH 12	Propose human, fiscal and other resources to achieve a strategic goal	HSMP 7603
DrPH 13	Cultivate new resources and revenue streams to achieve a strategic goal	HSMP 7603
Policy & Programs		
DrPH 14	Design a system-level intervention to address a public health issue	CBHS 7670 EHOH 7403

DrPH 15	Integrate knowledge of cultural values and practices in the design of public health policies and programs	PUBH 6842 #2
DrPH 16	Integrate scientific information, legal and regulatory approaches, ethical frameworks and varied stakeholder interests in policy development and analysis	PUBH 6842 #2
DrPH 17	Propose interprofessional and/or intersectoral team approaches to improving public health	PUBH 6842 #4
Education & Workforce Development		
DrPH 18	Assess an audience's knowledge and learning needs	PUBH 6842 #4
DrPH 19	Deliver training or educational experiences that promote learning in academic, organizational or community settings	PUBH 6842 #4
DrPH 20	Use best practice modalities in pedagogical practices	PUBH 6842 #4

Identifier	DrPH Community and Behavioral Health Focus Area (FA) Competencies	Course Where Competency is Addressed/Assessed
DrPH-CBHS 1	Synthesize health behavior theories, models, frameworks and evidence-based integrative strategies at multiple levels of the socio-ecological model to develop theory-informed conceptual models	CBHS 7670
DrPH-CBHS 2	Apply multivariable statistical techniques to answer public health research or practice questions.	CBHS 7637
DrPH-CBHS 3	Demonstrate an in-depth understanding of measurement and apply statistical techniques to analyze latent variables.	CBHS 7010
DrPH-CBHS 4	Employ qualitative methods to collect and analyze qualitative data, and critically appraise the role of qualitative research to inform public health issues.	CBHS 7638
DrPH-CBHS 5	Integrate principles of design for dissemination into the development of a public health intervention.	CBHS 7670

Identifier	DrPH Environmental & Occupational Health Focus Area (FA) Competencies	Course Where Competency is Addressed/Assessed
DrPH-EHOH 1	Critically evaluate toxicological and epidemiological data and explain its role in informing risk-based decision making	EHOH 7631
DrPH-EHOH 2	Create a plan for a study to evaluate the impacts of an environmental or occupational hazard on human health, that is methodologically rigorous and addresses research ethics.	EHOH 7403
DrPH-EHOH 3	Create a data collection and management plan for an environmental or occupational health research or surveillance.	EHOH 7632
DrPH-EHOH 4	Recommend strategies for reducing human exposure to occupational or environmental hazards and improving human health.	EHOH 7403
DrPH-EHOH 5	Analyze the distribution of exposure in a population using appropriate statistical methods.	BIOS 6611
DrPH-EHOH 6	Identify populations disproportionally impacted by an environmental or occupational hazard.	EHOH 7631

Identifier	DrPH Epidemiology Focus Area (FA) Competencies	Course Where Competency is Addressed/Assessed
DrPH-EPID 1	Critically evaluate epidemiological study designs and describe the advantages and limitations of each for addressing specific public health problems and recommend design modifications to strengthen validity.	EPID 7631
DrPH-EPID 2	Apply basic ethical and legal principles involved in the collection, management, use and dissemination of epidemiologic data in research or public health practice.	EPID 7605
DrPH-EPID 3	Select and apply appropriate epidemiologic study design and analysis methods when using secondary data sources, such as surveillance, national surveys, and medical record data, to address public health practice needs.	EPID 7605
DrPH-EPID 4	Demonstrate mastery of a substantive area in epidemiology, including the application of that knowledge by writing a proposal that is designed to answer a specific epidemiologic or public health question.	EPID 7605
DrPH-EPID 5	Calculate and interpret measures of association between exposure and disease, adjusted for relevant confounders, to draw appropriate inferences and evaluate causality for a public health problem.	BIOS 6612 EPID 7632

Identifier	MS Biostatistics Competencies	Course Where Competency is Addressed/Assessed
MS-BIOS 1	Carry out and explain calculations, derivations and proofs central to basic statistical theory, and explain their use and implications in applied statistical work.	BIOS 6631
MS-BIOS 2	Apply statistical concepts of basic study designs including bias, confounding and efficiency, and identify strengths and weaknesses of experimental and observational designs.	BIOS 6618
MS-BIOS 3	Carry out exploratory and descriptive analyses of complex data using standard statistical software and methods of data summary and visualization.	BIOS 6618 BIOS 6621
MS-BIOS 4	Carry out valid and efficient modeling, estimation, model checking and inference using standard statistical methods and software.	BIOS 6618 BIOS 6619 BIOS 6643
MS-BIOS 5	Demonstrate statistical programming proficiency, good coding style and use of reproducible research principles using leading statistical software.	BIOS 6618 BIOS 6619 BIOS 6624
MS-BIOS 6	Demonstrate basic skills necessary for collaborating with non-biostatistical scientists, including mapping study aims to testable hypotheses, carrying out basic power and sample size estimation and evaluation, and identifying appropriate design, modeling and analysis methods to address study hypotheses.	BIOS 6621 BIOS 6624
MS-BIOS 7	Communicate, orally and in writing, simple and complex statistical ideas, methods and results in non-technical terms appropriate for collaborator needs (e.g. preparation of analysis section of grant proposals and methods and results sections of manuscripts).	BIOS 6950 BIOS 6651

Identifier	MS Epidemiology Competencies	Course Where Competency is Addressed/Assessed
MS-EPID 1	Formulate sound scientific research questions.	EPID 6630 EPID 6631
MS-EPID 2	Select and apply appropriate study design, data collection and analysis methods to address research or public health topics.	BIOS 6680 EPID 6605/6607 EPID 6626 EPID 6631
MS-EPID 3	Critically appraise research and public health studies for internal and external validity, with consideration of how these issues influence interpretation of study findings.	EPID 6626
MS-EPID 4	Determine strategies to prevent or minimize study biases in research and public health studies.	EPID 7631 BIOS 6611 BIOS 6612
MS-EPID 5	Calculate and interpret measures of disease frequency and association measures to draw appropriate inferences and evaluate causality.	EPID 7631 BIOS 6611 BIOS 6612

Identifier	MS Worker Health, Safety and Wellbeing Competencies MS and Competencies Effective Summer/Fall 2027	Course Where Competency is Addressed/Assessed
MS-WHSW 1	Evaluate potential mental or physical health effects of working conditions.	EHOH 6614 EHOH 6619
MS-WHSW 2	Conduct a Total Worker Health assessment to identify organizational hazards, including hazards to safety, health, or well-being.	EHOH 6628
MS-WHSW 3	Design and apply integrated, evidence-based organizational strategies that address the root causes of workplace physical or mental health risks.	EHOH 6628
MS-WHSW 4	Analyze ways organizational leaders can demonstrate commitment to the Total Worker Health approach.	EHOH 6639
MS-WHSW 5	Critically evaluate worker health research.	EHOH 6636
MS-WHSW 6	Communication Total Worker Health concepts effectively to stakeholders through written or oral communications.	EHOH 6638

Identifier	PhD Biostatistics Competencies	Course Where Competency is Addressed/Assessed
PHD-BIOS 1	Carry out and explain calculations, derivations and proofs central to advanced statistical theory, and explain their use and implications in applied statistical work.	BIOS 7731
PHD-BIOS 2	Carry out advanced statistical modeling using a range of statistical theory, methods and computation.	BIOS 7732
PHD-BIOS 3	Demonstrate advanced collaborative biostatistical skills, including formulating testable study aims, identifying, designing and evaluating statistical analyses appropriate for study aims, reading and synthesizing biostatistical literature relevant to study analyses, and suggesting new methods when existing approaches are inadequate.	Qualifying Exam Comprehensive Exam
PHD-BIOS 4	Carry out independent biostatistical research involving development and evaluation of novel statistical methods and their application to problems of importance in health science research, and report the methods and findings orally and in writing (e.g., a dissertation and publishable papers).	BIOS 8990

Identifier	PhD Epidemiology Competencies	Course Where Competency is Addressed/Assessed
PHD-EPID 1	Transform scientific questions into study aims with testable hypotheses, a research protocol with appropriate data collection methods and an analysis plan.	EPID 7632 EPID 7605 EPID 7912
PHD-EPID 2	Synthesize a body of evidence, while critically evaluating methodologic quality of individual studies, to identify areas of need for future investigations.	EPID 7632 EPID 7912
PHD-EPID 3	Create research proposals to answer a research or public health question using a variety of data sources; considering limitations, study design and analytic solutions.	EPID 7632 EPID 7605 EPID 7912
PHD-EPID 4	Develop statistical models appropriate to specific study designs, distinguishing between predictive, associative, and causality-based analytic approaches.	EPID 7632
PHD-EPID 5	Demonstrate mastery of a substantive area of research including knowledge and application of that knowledge in conducting original research.	EPID 7912
PHD=EPID 6	Demonstrate excellent written and oral communication skills to translate the results of research findings to the public or other professionals.	EHOH 7405

Identifier	PhD Health Service Research Competencies	Course Where Competency is Addressed/Assessed
PHD-HSR 1	Identify the main components and issues of the organization, financing, and delivery of health services and public health systems in the U.S.	HSMP 6604
PHD-HSR 2	Identify and measure clinically meaningful and/or policy relevant outcomes and apply evidence-based practice principles.	CLSC 7202
PHD-HSR 3	Critically appraise existing literature and evaluate manuscripts published in peer-reviewed journals	HSMP 7010
PHD-HSR 4	Demonstrate breadth of health services research theoretical and conceptual knowledge by applying alternative organizational and behavioral models from a range of relevant disciplines.	HSMP 7010 HSMP 7601
PHD-HSR 5	Pose innovative and important health service research questions, informed by systematic reviews of the literature, stakeholder needs, and relevant theoretical and conceptual models.	HSMP 7601
PHD-HSR 6	Select the appropriate econometric/statistical specification and estimation technique, including using specification tests and theoretical justifications for distributional assumptions, the choice of link function, and estimation approach for a variety of outcomes	HSMP 7609
PHD-HSR 7	Choose and define the appropriate unit of analysis and approach to computing standard errors for conducting hypothesis test.	HSMP 7609
PHD-HSR 8	Understand and apply methods for causal inference and identify the assumptions that may or may not hold for a causal interpretation.	HSMP 7609
PHD-HSR 9	Write and know how to submit grant proposals to federal, state, and non-governmental organizations.	CLSC 7101
PHD-HSR 10	Describe and adhere to legal, ethical and regulatory issues related to clinical research.	CLSC 7150
PHD-HSR 11	Demonstrate the ability to effectively communicate the findings and implications of health service research through multiple modalities to an interdisciplinary audience.	CLSC 6210
PHD-HSR 12	Independently design, conduct, and defend research studies using health services research methods.	HSMP 7609
PHD-HSR 13	Participate in interdisciplinary collaboration, provide constructive reviews and feedback to colleagues, and demonstrate leadership in the appropriate application of health services research methods.	CLSC 6210

Identifier	PhD Climate and Human Health Competencies	Course Where Competency is Addressed/Assessed
PHD-CLHH1	Form a hypothesis and synthesize testable aims to evaluate a climate and human health-related question.	EPID 7912
PHD-CLHH 2	Design risk management, preparedness, or communication approaches to prevent and/or reduce the climate-related health effects in occupational or community populations.	EHOH 7401
PHD-CLHH 3	Demonstrate knowledge in equity, populations at elevated risk of climate-related health effects, or environmental and climate justice issues in communities or workforces.	EHOH 6635
PHD-CLHH 4	Synthesize transdisciplinary scientific literature related to climate and human health in communities or workforces.	EHOH 6635
PHD-CLHH 5	Demonstrate ability to describe sources of bias in data collection and how they can impact validity or strategies in climate and environmental health study design or statistical analysis to minimize bias.	EHOH 6617
PHD-CLHH 6	Interpret qualitative or quantitative findings to identify interventions or mitigation strategies to prevent or reduce climate-related health effects.	EHOH 7401
PHD-CLHH 7	Demonstrate skills to identify or critically evaluate data sources appropriate for answering applied research and program evaluation questions.	EHOH 7631
PHD-CLHH 8	Develop grant proposals to conduct research to test well-conceived hypotheses and/or evaluation studies to assess impact.	EPID 7912
PHD-CLHH 9	Apply ethical principles including authorship involved in leading research.	EPID 7605
PHD-CLHH 10	Demonstrate excellent written and oral communication skills to translate the results of research findings to the public or other professionals.	EHOH 7405

CEPH Foundational Public Health Knowledge			
Identifier	**CEPH Foundational Public Health Knowledge Element**	**MPH Course Where Knowledge Element is Addressed**	**DrPH, MS, PhD Course Where Knowledge Element is Addressed**
1	Explain public health history, philosophy, and values.	PUBH 6600 PBHC 5160	PUBH 6600
2	Identify the core functions of public health and the 10 Essential Services.	PUBH 6600 PBHC 5160	PUBH 6600
3	Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health.	BIOS 6601 CHBH 6120 PBHC 5600 CBHS 6610	EHOH 6601
4	List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program.	PUBH 6600 PBHC 5160	PUBH 6600
5	Discuss the science of primary, secondary, and tertiary prevention in population health, including health promotion, screening, etc.	EPID 6630 CHBH 6200 PBHC 5700	EPID 6630
6	Explain the critical importance of evidence in advancing public health knowledge.	PUBH 6600 PBCH 5160	PUBH 6600
7	Explain effects of environmental factors on a population's health	EHOH 6614 CHBH 5500 PBHC 5300	EHOH 6601
8	Explain biological and genetic factors that affect a population's health.	EPID 6630 CHBH 6200 PBHC 5700	EHOH 6601
9	Explain behavioral and psychological factors that affect a population's health.	CBHS 6610 CHBH 5090 PBHC 5500	EHOH 6601
10	Explain the social, political, and economic determinants of health and how they contribute to population health and health inequities.	PUBH 6600 PBHC 5160	PUBH 6600
11	Explain how globalization affects global burdens of disease.	EHOH 6614 CHBH 5500 PBHC 5300	EHOH 6601
12	Explain an ecological perspective on the connections among human health, animal health, and ecosystem health (e.g. One Health).	EHOH 6614 CHBH 5500 PBHC 5300	EHOH 6601