

ERF 2.6.c. Competency Matrices

2.6.c. A matrix that identifies the learning experiences (eg, specific course or activity within a course, practicum, culminating experience or other degree requirement) by which the competencies defined in Criteria 2.6.a. and 2.6.b are met. If these are common across the school, a single matrix for each degree will suffice. If they vary, sufficient information must be provided to assess compliance by each degree and concentration. See CEPH Data Template 2.6.1.

MPH Core Competencies: *Upon graduation, a student with a Master of Public Health should be able to ...*

Table 2.6.1.1. Courses and other learning experiences by which the competencies are met in the **MPH Program**

Competencies	CPH 500 Foundations of Public Health	CPH 501 Health Behavior	CPH 502 Health Services Administratio n	CPH 503 Public Health, Environment, and Society	CPH 504 Epidemiology in Public Health	CPH 505 Applied Research in Public Health	CPH 506 Biostatistics I	Other Learning Experiences
1. Core Domain: Biostatistics								
A. Describe the roles biostatistics serve in public health.						R	P	
B. Apply descriptive and inferential methodologies according to the type of study design.							P	
C. Interpret results of statistical analyses in public health studies.						R	P	
2. Core Domain: Environmental Health Sciences								
A. Describe how biological, chemical, and physical agents affect human health.				P				
B. Describe federal and state regulatory programs, guidelines, and authorities that control environmental health issues.				P				

Competencies	CPH 500 Foundations of Public Health	CPH 501 Health Behavior	CPH 502 Health Services Administratio n	CPH 503 Public Health, Environment, and Society	CPH 504 Epidemiology in Public Health	CPH 505 Applied Research in Public Health	CPH 506 Biostatistics I	Other Learning Experiences
C. Specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety.				P				
D. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.				P				
3. Core Domain: Epidemiology								
A. Explain the importance of epidemiology for informing public health issues.					P	R		
B. Identify key sources of data for epidemiological purposes.					P			
C. Calculate basic epidemiology measures and draw appropriate inferences from epidemiological data.					P		R	
D. Use epidemiological measures to describe a public health problem in terms of magnitude, person, time, and place.					P	R		
4. Core Domain: Health Policy and Management								
A. Identify the main components and issues of the structure, financing, and delivery of health services within health systems in the U.S.			P					

Competencies	CPH 500 Foundations of Public Health	CPH 501 Health Behavior	CPH 502 Health Services Administratio n	CPH 503 Public Health, Environment, and Society	CPH 504 Epidemiology in Public Health	CPH 505 Applied Research in Public Health	CPH 506 Biostatistics I	Other Learning Experiences
B. Discuss the policy process for improving the health status of populations.			P					
C. Identify the fundamentals of organizational management.			P					
D. Discuss the theory of organizational structures and behaviors.			P					
5. Core Domain: Social and Behavioral Sciences								
A. Identify social and behavioral theories, concepts, and models used in public health research and practice.		P				R		
B. Identify social and behavioral factors that affect the health of individuals and populations.	R	P				R		
C. Describe the planning, implementation, and evaluation of public health programs, policies, and interventions.	P	R						
D. Specify targets and levels of intervention for social and behavioral science programs and policies.		P				R		
6. Cross-cutting Domain: Foundations of Public Health								
A. Describe the ecological model of public health.	P	P						

Competencies	CPH 500 Foundations of Public Health	CPH 501 Health Behavior	CPH 502 Health Services Administratio n	CPH 503 Public Health, Environment, and Society	CPH 504 Epidemiology in Public Health	CPH 505 Applied Research in Public Health	CPH 506 Biostatistics I	Other Learning Experiences
B. Describe basic biological principles that apply to public health.	P	R						
C. Communicate accurate public health information with professional and lay audiences.	P			R		R	R	
7. Cross-cutting Domain: Applied Research Skills								
A. Identify and apply fundamental research skills in public health.				R		P	R	
B. Identify and critically appraise public health research.				R		P	R	
C. Prepare grant proposals.	R			R		P	R	
8. Cross-cutting Domain: Leadership, Advocacy, and Community-Building								
A. Identify linkages with key stakeholders.	R	R	R					
B. Identify different levels of community engagement and participation.	R	R	R					
C. Engage in collaborative problem-solving and decision-making.	R		R	R			R	
9. Cross-cutting Domain: Culture and Diversity								
A. Discuss determinants of health disparities.	P	P						
B. Describe methods and regulations associated with public health practice in relation to diverse populations.	P							
10. Cross-cutting Domain: Ethics Skills								

Competencies	CPH 500 Foundations of Public Health	CPH 501 Health Behavior	CPH 502 Health Services Administratio n	CPH 503 Public Health, Environment, and Society	CPH 504 Epidemiology in Public Health	CPH 505 Applied Research in Public Health	CPH 506 Biostatistics I	Other Learning Experiences
A. Apply ethical principles to the collection, maintenance, use, and dissemination of public health information.	R		P		R	R	R	
B. Articulate how ethical principles apply to public health practice.	P				R		R	

Master of Public Health Concentrations

Biostatistics Concentration Competencies: *Upon graduation, a student with an MPH in Biostatistics should be able to ...*

Table 2.6.1.2. Courses and other learning experiences by which the competencies are met in the **Biostatistics concentration**

Competencies	CPH 652 Biostatistical Methods II	CPH 653 Categorical Data Analysis	CPH 654 Survival Data Analysis	CPH 655 Correlated Data Analysis	Other Learning Experience
1. Statistical Considerations in Study Design					
A. Formulate pertinent research questions and hypotheses in statistical terms.	P	P	P	P	
B. Identify strengths and weaknesses of study designs and implement scientifically and statistically sound design strategies.	P	P	P	P	
C. Select variables relevant to a specific public health or biomedical problem for utilization in statistical design and analysis.	P	P	P	P	
D. Recognize sources of bias and confounding in study design.	P	P	P	P	
E. Determine statistical power and sample size needed for future public health and biomedical studies.		R	P	R	
2. Perform Statistical Analysis of Data					
A. Apply appropriate statistical methods for estimation and inference, including univariate and multivariate methods appropriate for continuous, categorical, and time-to-event data.	P	P	P	P	
B. Utilize a software package for data management, statistical analyses, and data presentation.	P	P	P	P	
C. Apply statistical methods for quality control and data cleaning to already collected data, before the actual statistical analysis.	P	P	P	P	
D. Verify assumptions of statistical tests and models and implement appropriate methods to address observed violations of the assumptions.	P	P	P	P	
E. Apply basic measures to account for confounding factors in the analysis of public health and biomedical studies, including matching, and multivariable analysis.	P	P	P	P	
F. Evaluate the strengths and limitations of statistical analyses of public health and biomedical studies.	P	P	P	P	
3. Interpretation and Dissemination of Statistical Analysis					

A. Develop written and oral presentations based on statistical findings for both public health professionals and lay audiences.	P	P	P	P	
4. Ethical/Legal Treatment of Human Subjects					
A. Be familiar with the Institutional Review Board (IRB) research requirements and process.					CPH 517, SL/CE

Community-Oriented Primary Care Concentration Competencies: Upon graduation, a student with an MPH in Community Oriented Primary Care should be able to...

Table 2.6.1.3. Courses and other learning experiences by which the competencies are met in the **COPC concentration**

Competencies	CPH 551 Community Oriented Primary Care (COPC): Principles & Practice	CPH 552 Opportunities & Challenges in the Applicability of Community Oriented Primary Care (COPC)	CPH 545 Introduction to Health Disparities & Health Equity	CPH 538 Public Health Program Evaluation	CPH 528 Service Learning CPH 529 Capstone Experience
1. The Community Dimension in Health Care					
A. Explain the ecological model of Community Health.	P		R		
B. Identify the role of the community in the promotion and improvement of its own health and on health care services.	P		P		R
C. Demonstrate understanding of the role and value of primary health care in promotion of community health as an integral component of the health care system.	R	P	R		R
D. Formulate different definitions of community.	P		R		R
E. Identify the purpose, content, and methods in the characterization of a community.	P				R
2. Community Oriented Primary Care (COPC)					
A. Describe, analyze, and integrate the conceptual framework and principles of COPC.	P		R		R
B. Define a community for the purpose of clinical care at the community level; and plan an assessment of health needs using available data for the collection and analysis of health information.	P			R	R

C. Justify the need for the prioritization process in COPC, and define objective criteria to be used for the selection and determination of methods to discuss process and decision.	P				R
D. Demonstrate the ability to plan an in-depth selective detailed assessment of a health or set of health conditions in the community, using quantitative and qualitative methods.	P			R	R
E. Demonstrate the ability to plan and develop all the stages of a systematic COPC intervention considering evidence based interventions and apply appropriate methods to promote community participation in the development of COPC.	P				R
F. Analyze the differential features and factors involved in the application of COPC worldwide, and identify the opportunities and challenges in the current application of COPC to different healthcare systems.		P			
G. Assess the conceptual and practical factors to take into account the applicability of COPC, recognize the socio-economic, cultural, environment, political and health policy elements that could challenge the application of COPC and develop alternative application solutions.	R	P	R		R
H. Communicate the principles and features of the practice of COPC to lay populations, to health	P	R			R

professionals, and to other related audiences.					
3. Community Oriented Primary Care, Health Information, and Health Disparities					
A. Assess the organizational needs for the collection of health information and identify appropriate sources for monitoring and evaluating of COPC services.	P			P	R
B. Assess and evaluate the quality of health data and health information systems in the planning of community health interventions.	P		R	R	R
C. Analyze the challenges of the current health care system for vulnerable populations and assess the role of community oriented primary care to promote health equity and help reduce health disparities.	R	P	R		R
4. Values in Community Oriented Primary Care					
A. Discuss the scope and implications of social justice and equity in the development of a COPC practice.	R	P	R		
B. Explain and demonstrate how community involvement in COPC could be a step in community development.	R	P	R		R

Environmental and Occupational Health Concentration Competencies: Upon graduation, a student with an MPH in Environmental and Occupational Health should be able to...

Table 2.6.1.4. Courses and other learning experiences by which the competencies are met in the **EOH concentration**

Competencies	CPH 590 Elements of Industrial Safety for Health Sciences	CPH 593 Principles of Occupational & Environmental Health	CPH 594 Environmental Exposure Assessment	CPH 597 Principles of Toxicology	Other Learning Experiences
1. Industrial Safety for Health Sciences					
A. Apply evidenced-based safety engineering and occupational health concepts and methods to the identification, evaluation, prevention, and control of important injury and illness hazards in general industry work environments.	P		R		
B. Synthesize and apply specific occupational health and safety regulations and best practices to common workplace environments and situations in accordance with OSHA 29 CFR 1910 Occupational Health and Safety Standards for General Industry.	P		R		
C. Identify and describe the human and organizational direct and indirect costs of accidents and injuries in the workplace and to the community at large.	P				
D. Discuss and apply common accident causation models to case study scenarios to develop effective corrective action to prevent future occurrence.	P				
E. Discuss the major components of an effective and efficient general industry safety program.	P				
F. Discuss and apply basic risk management and risk communication	P		R	R	

Competencies	CPH 590 Elements of Industrial Safety for Health Sciences	CPH 593 Principles of Occupational & Environmental Health	CPH 594 Environmental Exposure Assessment	CPH 597 Principles of Toxicology	Other Learning Experiences
1. Industrial Safety for Health Sciences					
approaches to common industrial safety and health problems.					
2. Occupational and Environmental Health					
A. Explain the role of biology and the environment in the ecological model of population-based health.		P		R	
B. Specify pathways of exposure including routes of transfer from the source, through all environmental media, to humans.		P	P		
C. Identify major causes of workplace related illnesses and approaches to reducing occupational health risks.	R	P	R		
D. Describe seminal historical cases that have shaped understanding of environmental and occupational health and have helped to avoid repeating past mistakes.	R	P	R		
E. Identify ethical, social, and legal issues central to occupational health.	R	P	R	R	
F. Describe how human behavior impacts environmental and occupational exposures and outcomes.	R	P	R		
G. Develop interventions to reduce environmental and occupational exposures.		P			
3. Exposure Assessment					
A. Identify current environmental risk assessment methods.			P	R	
B. Identify the relationship between exposure assessment and landmark United States occupational and			P		

Competencies	CPH 590 Elements of Industrial Safety for Health Sciences	CPH 593 Principles of Occupational & Environmental Health	CPH 594 Environmental Exposure Assessment	CPH 597 Principles of Toxicology	Other Learning Experiences
1. Industrial Safety for Health Sciences					
environmental laws, standards, and regulations.					
C. Identify and describe the exposure pathways for environmental and occupational agents associated with human diseases.			P	R	
D. Develop and implement a sampling strategy and methodologies to develop an exposure assessment, and model the results to estimate exposure.			P		
4. Toxicology					
A. Integrate general biological, physiological, pharmacological, and molecular concepts into public health.				P	
B. Describe genetic and physiological factors that affect susceptibility to adverse health outcomes following exposure to environmental and occupational hazards.				P	
C. Specify the role of the immune system and other organ systems in health.				P	

Epidemiology Concentration Competencies: Upon graduation, a student with an MPH in Epidemiology should be able to...

Table 2.6.1.5. Courses and other learning experiences by which the competencies are met in the **Epidemiology concentration**

Competencies	CPH 621 Applied Epidemiology	CPH 623 Infectious Disease Epidemiology	CPH 650 Biostatistics II	CPH 620 Chronic Disease Epi	CPH 641 Cancer Epi 2 credits	CPH 642 Ca Epi in Spec. Populations	CPH 646 Mental Health Epidemiology	Other Learning Experiences
1. Problem Conceptualization								
A. Conceptualize epidemiologic research questions and hypotheses.	P	P	P	P	P	P	P	
B. Apply principles of causal inference to epidemiologic data.	P	R	R	P	P	P	P	
C. Review and critique published epidemiologic studies.	P	R	P	P	P	P	P	
2. Surveillance								
A. Identify key sources of surveillance data.	P	R		P	P	P	P	
B. Compute epidemiologic measures using surveillance data.	P		R	R	R	R	R	
C. Use surveillance data to answer an epidemiologic question.	P		R	P	P	P	P	
3. Study Design								
A. Choose a study design appropriate for a particular epidemiologic question.	P	R	R	P	P	P	P	
B. Design an appropriate,	P	R	R	P	P	P	P	

Competencies	CPH 621 Applied Epidemiology	CPH 623 Infectious Disease Epidemiology	CPH 650 Biostatistics II	CPH 620 Chronic Disease Epi	CPH 641 Cancer Epi 2 credits	CPH 642 Ca Epi in Spec. Populations	CPH 646 Mental Health Epidemiology	Other Learning Experiences
scientifically sound study.								
4. Data Analysis and Interpretation								
A. Identify and interpret key study results.	P	R	P	R	R	R	R	
B. Select appropriate statistical methods for analysis of epidemiologic data.	P	R	P	R	R	R	R	
C. Identify potential sources and effects of bias in epidemiologic studies.	P	R	R	R	R	R	R	
D. Apply methods to minimize sources of bias in epidemiologic study results.			R	R	R	R	R	
5. Dissemination of Study Findings								
A. Communicate epidemiologic information to lay and professional audiences.			R	P	R	R	P	

Health Policy Concentration Competencies: *Upon graduation, a student with an MPH in Health Policy should be able to...*

Table 2.6.1.6. Courses and other learning experiences by which the competencies are met in the **Health Policy concentration**

Competencies	CPH 555 Public Health Law	CPH 567 Health Policy Analysis & Evaluation	CPH 564 Health Economics	CPH 566 Health Policy	Other Learning Experiences
1. Formulation and Implementation					
A. Demonstrate knowledge of public health policy formulation and implementation strategies.	P			P	
B. Collect, analyze, and synthesize information about health policy problems and issues.	P	P		P	
C. Develop alternative policy options for specific public health issues and assess their economic, political, legal, and social implications.	R	P	R	P	
2. Analysis and Evaluation					
A. Evaluate the effectiveness of public health policy using formal methods of policy analysis and program evaluation.	R	P	R	P	
B. Comparatively analyze and interpret legislation, administrative regulations, judicial opinions, and agency rulings.	P			P	
C. Apply economic principles and theories to analyze the delivery of health care services, public health, and health policy issues.			P	P	

Health Promotion Concentration Competencies: Upon graduation, a student with an MPH in Health Promotion should be able to...

Table 2.6.1.7. Courses and other learning experiences by which the competencies are met in the **Health Promotion concentration**

Competencies	CPH 534 Interventions in Health Promotion	CPH 536 Health Promotion Program Planning	CPH 538 Public Health Program Evaluation	CPH 539 Public Health Leadership & Advocacy	Other Learning Experiences CPH528/529 Capstone/SL (Varies)
1. Program and Intervention Planning					
A. Demonstrate skills needed to conduct health-related needs assessments in a variety of communities.	P	P		R	R
B. Apply community health and organizational theories, models, principles, and best practices in planning health promotion programs or interventions.	P	R			R
C. Identify, incorporate, and analyze contexts and key factors relevant to the implementation of health promotion programs or interventions.	P	P			R
2. Evaluation of Programs and Interventions					
A. Identify and evaluate health-related data and instruments.	P	R	P		R
B. Utilize appropriate qualitative and quantitative evaluation methods.		R	P		R
C. Apply evaluation findings to programs and policies.		P	P	R	R
3. Community Engagement					
A. Demonstrate skills needed to coordinate and facilitate community groups, coalitions, and partnerships.	P	R		P	R
4. Management and Leadership					
A. Demonstrate abilities in the administration and management of community health programs.	P	R		P	R
B. Demonstrate the skills to advance a systems approach to community health through professional leadership and practice.				P	R

Maternal and Child Health Concentration Competencies: Upon graduation, a student with an MPH in Maternal and Child Health should be able to...

Table 2.6.1.8. Courses and other learning experiences by which the competencies are met in the **MCH concentration**

Competencies	CPH 546 Introduction to MCH	CPH 547 Advanced MCH	CPH 548 Child and Adolescent Growth and Development	CPH 549 Women's Health	CPH 627 MCH Epidemiology
1. Scientific Basis					
A. Identify the major behavioral, morbidity, and mortality issues within the maternal and child populations at the local, state, national, and global levels.	P	R	R	R	P
B. Assess the socio-economic, cultural, biological, environmental, and societal determinants of health and disease in maternal and child populations.	P	R	P	P	P
C. Identify appropriate methods to study health status and its determinants, and design interventions.		P	R		P
D. Identify the key elements in the life course perspective and how they are applied.	P	R	R	P	R
2. Methodological and Analytical Skills					
A. Use data to analyze health status and its determinants through the life span, and to identify effective interventions.		P	R	R	R
B. Critically analyze the qualitative and quantitative methods applied in MCH research.	P	R	R		R
C. Identify existing gaps in knowledge in MCH assessments and interventions, and propose alternatives to close the gaps.		P	R	R	
3. Management and Communication Skills					

Competencies	CPH 546 Introduction to MCH	CPH 547 Advanced MCH	CPH 548 Child and Adolescent Growth and Development	CPH 549 Women's Health	CPH 627 MCH Epidemiology
A. Apply knowledge of management and organizational theories in the development of proposals for program interventions and research.		P			
B. Present an effective oral and written presentation to diverse audiences.	P	R	R	P	R
4. Policy and Advocacy Skills					
A. Describe the historical development of MCH public policies and practices in the U.S. for federal, state, and local agencies and programs serving maternal and child populations.	P			R	
B. Analyze the current organizations and their gaps in MCH services and programs.	P		R	P	
5. Values and Ethics in MCH Public Health Practice					
A. Analyze the principles of equity, social justice, and human rights in the assessment of the health of maternal and child populations and programs for those populations.	P	R	R	P	
B. Identify the ethical principles in MCH practice and research.	P	R		R	

Public Health Administration Concentration Competencies: Upon graduation, a student with an MPH in Public Health Administration should be able to...

Table 2.6.1.9. Courses and other learning experiences by which the competencies are met in the **Public Health Administration concentration**

Competencies	CPH 562 Human Resources Management in Health Organizations	CPH 563 Strategic Planning and Management in Public Health	CPH 580 Health Care Organizational Theory and Behavior	CPH 565 Health Care Finance	Other Learning Experiences
1. Organizational Theory and Behavior					
A. Describe fundamental concepts and information about organizational and behavioral theories in health care.			P		
B. Demonstrate the skills to resolve organizational problems through a systems approach.			P		
C. Demonstrate the skills to analyze organizational issues from a multidisciplinary perspective.			P		
2. Health Care Finance					
A. Prepare operating and capital budgets, considering political, economic, and social contexts; using appropriate financial and statistical tools; and stating assumptions and justifications.				P	CPH 506 (R)
B. Demonstrate the skills to implement budgets, evaluating actual performance and taking appropriate actions to enhance performance and/or revise budgets.				P	
C. Analyze risk as a basis for financial decision-making and implement appropriate risk mitigation strategies.				P	
D. Demonstrate the application of financial management techniques to enhance performance of public health and health services organizations.				P	

Competencies	CPH 562 Human Resources Management in Health Organizations	CPH 563 Strategic Planning and Management in Public Health	CPH 580 Health Care Organizational Theory and Behavior	CPH 565 Health Care Finance	Other Learning Experiences
3. Strategic Planning					
A.. Evaluate and document internal and external strengths, weakness, opportunities, and threats to identify strategic issues.		P			
B. Prepare strategic and operational plans that consider current and potential internal and external issues.		P			
C. Demonstrate the skills to lead and facilitate planning activities.		P			
D. Demonstrate the skills to implement operational and strategic plans, evaluating performance and adjusting implementation activities and/or plans.		P			
4. Human Resources Management					
A. Describe various theories, principles, best practices, and challenges of human resources management in health care organizations.	P				
B. Explain the effects of human factors and demographics in managing others.	P				
C. Identify the legal, political, social, and economic issues that impact human resources management.	P				

Public Health Practice: Upon graduation, a student with an MPH in Public Health Practice should be able to...

Table 2.6.1.10. Courses and other learning experiences by which the competencies are met in the **Public Health Practice concentration**

Competencies	CPH 536 PH Program Planning	CPH 538 PH Program Evaluation	CPH 563 Strategic Planning and Management in Public Health	CPH 565 Health Care Finance	Other Learning Experiences
1. Program and Intervention Planning					
A. Demonstrate skills needed to conduct health-related needs assessments in a variety of communities.	P				
B. Apply community health and organizational theories, models, principles, and best practices in planning health promotion programs or interventions.	P				
C. Identify, incorporate, and analyze contexts and key factors relevant to the implementation of health promotion programs or interventions.	P	R			
2. Evaluation of Programs and Interventions					
A. Identify and evaluate health-related data and instruments.	P				
B. Utilize appropriate qualitative and quantitative evaluation methods.	P				
C. Apply evaluation findings to programs and policies.		P			
3. Strategic Planning					
A.. Evaluate and document internal and external strengths, weakness, opportunities, and threats to identify strategic issues.			P		
B. Prepare strategic and operational plans that consider current and potential internal and external issues.			P		
C. Demonstrate the skills to lead and facilitate planning activities.			P		

Competencies	CPH 536 PH Program Planning	CPH 538 PH Program Evaluation	CPH 563 Strategic Planning and Management in Public Health	CPH 565 Health Care Finance	Other Learning Experiences
D. Demonstrate the skills to implement operational and strategic plans, evaluating performance and adjusting implementation activities and/or plans.			P		
4. Health Care Finance					
A. Prepare operating and capital budgets, considering political, economic, and social contexts; using appropriate financial and statistical tools; and stating assumptions and justifications.				P	CPH 506 (R)
B. Demonstrate the skills to implement budgets, evaluating actual performance and taking appropriate actions to enhance performance and/or revise budgets.				P	
C. Analyze risk as a basis for financial decision-making and implement appropriate risk mitigation strategies.				P	
D. Demonstrate the application of financial management techniques to enhance performance of public health and health services organizations.				P	

Social Marketing and Health Communication Concentration Competencies: Upon graduation, a student with an MPH in Social Marketing and Health Communication should be able to...

Table 2.6.1.11. Courses and other learning experiences by which the competencies are met in the **SMHC concentration**

Concentration Competencies	CPH541 Introduction to Social Marketing & Health Communication	CPH542 Applied Social Marketing	CPH 543 Health Literacy and Communication for Health Professionals	CPH 538 Public Health Program Evaluation	Other Learning Experiences
1. Macro-level Assessment					
A. Identify social determinants of health for the purpose of tailoring social marketing and health communication programs to diverse populations.	R	R	P	R	
B. Identify and demonstrate various modes of learning such as written, audio, visual, and kinesthetic in health communication.	P	R	P	R	
C. Identify the levels of health literacy and the instruments used to measure functional health literacy levels for research purposes vs. community settings.	R	R	P	R	
2. Program Planning					
A. Articulate the ethical principles of social marketing and health communication as they apply to public health practice.	P	P	R	R	
B. Explain the process to foster collaboration by establishing partnerships with communities, stakeholders, gatekeepers, and members of the identified priority population.	P	P	P	P	
C. Demonstrate leadership, advocacy, and community building in the field of social marketing and health communication by utilizing effective health communication strategies.	R	R	P	P	
D. Describe how the ecological model influences social marketing and health communication.	P	P	R	R	

Concentration Competencies	CPH541 Introduction to Social Marketing & Health Communication	CPH542 Applied Social Marketing	CPH 543 Health Literacy and Communication for Health Professionals	CPH 538 Public Health Program Evaluation	Other Learning Experiences
E. Analyze marketing strategies and identify the best possible option given the resources available.	P	R	R	R	
3. Plan Implementation					
A. Demonstrate awareness of the need for cultural humility in communication methodology.	P	P	P	R	
B. Apply appropriate research methodologies to compile evidence that informs decision-making in social marketing and health communication.	P	P	R	R	
C. Identify and assess communication delivery channels, such as mass media, social media, and print materials.	P	P	P	R	
4. Plan Evaluation					
A. Choose appropriate evaluation designs and procedures for data collection. This may include developing survey instruments and interpreting and describing evaluation results.	P	P	R	P	
B. Evaluate existing social marketing campaigns through examination of process and performance outcomes.	P	R	R	P	

Academic Degrees

Master of Science in Emergency Preparedness

Table 2.6.1.12. Courses and other learning experiences by which the competencies are met in the **Emergency Preparedness program**.

Competencies	CPH 550 EP: Prevent	CPH 631 EP: Protect	CPH 553 EP: Respond	CPH 554 EP: Recover	Other Learning Experiences
1. Model Leadership					
1.1. Solve problems under emergency conditions.	P	P	P	P	Student Response Team Deployment
1.2. Manage behaviors associated with emotional responses in self and others.	P	R	R	P	Student Response Team Deployment
1.3. Facilitate collaboration with internal and external emergency response partners.	P	P	P	R	Student Response Team Deployment
1.4. Maintain situational awareness.	P	P	P	P	Student Response Team Deployment
1.5. Demonstrate respect for all persons and cultures.	R	R	R	P	Student Response Team Deployment
1.6. Act within the scope of one's legal authority.	P	P	R	R	Student Response Team Deployment
2. Communicate and Manage Information					
2.1. Manage information related to an emergency.	P	P	P	R	Student Response Team Deployment
2.2. Use principles of crisis and risk communication.		R	P		Student Response Team Deployment
2.3. Report information potentially relevant to the identification and control of an emergency through the chain of command.	P	R	R	R	Student Response Team Deployment
2.4. Collect data according to protocol.	R	P	R	R	Student Response Team Deployment
2.5. Manage the recording and/or transcription of data according to protocol.	R	P	R	R	Student Response Team Deployment
3. Plan for and Improve Practice					

Competencies	CPH 550 EP: Prevent	CPH 631 EP: Protect	CPH 553 EP: Respond	CPH 554 EP: Recover	Other Learning Experiences
3.1. Contribute expertise to a community hazard vulnerability analysis (HVA).	P			R	
3.2. Contribute expertise to the development of emergency plans.	P			R	
3.3. Participate in improving the organization's capacities (including, but not limited to programs, plans, policies, laws, and workforce training).	P	R	R	R	
3.4. Refer matters outside of one's scope of legal authority through the chain of command.	P	P	P	P	Student Response Team Deployment
4. Protect Worker Health and Safety					
4.1. Maintain personal/family emergency preparedness plans.		P			
4.2. Employ protective behaviors according to changing conditions, personal limitations, and threats.		R	P		Student Response Team Deployment
4.3. Report unresolved threats to physical and mental health through the chain of command.	P	P	P	P	Student Response Team Deployment

PhD Core Competencies: Upon graduation, a student with a Doctor of Philosophy should be able to...

Table 2.6.1.13. Courses and other learning experiences by which the competencies are met in the **PhD program**

Competencies	HPRO 830 Foundations in Public Health	EPI 820 Epidemiology in Public Health	BIOS 806 Biostatistics I*	BIOS 808 Biostatistics II*	Dissertation 999 BIOS, ENV, EPI, HPRO, HSRA	Other Learning Experiences
1. Demonstrate an in-depth knowledge and understanding of public health and related issues.	P	R				Doctoral Seminar
2. Critically evaluate research, reports, and data using theories and frameworks relevant to public health.		R	R	R	P	Doctoral Seminar Comprehensive Exam (EHOHT)
3. Demonstrate an in-depth understanding of theoretical, multidisciplinary concepts relevant to public health issues.	P	R				Doctoral Seminar**
4. Design and conduct original research in public health.			R	R	P	
5. Incorporate knowledge of cultural, social, behavioral, and biological factors in formulating and implementing public health research, teaching, and service.	P	R				Doctoral Seminar ENV 970 (EOHT)
6. Demonstrate teaching and presentation skills in academic, research, and practice settings.		R			R	Doctoral Seminar
7. Demonstrate cultural sensitivity in research, teaching, and service.	P		R	R		Doctoral Seminar
8. Demonstrate grant- and manuscript-writing skills.	P				P	Doctoral Seminar
9. Articulate the process for developing and/or sustaining collaborations with communities, policy makers, and other relevant groups.	P	R				Doctoral Seminar

Competencies	HPRO 830 Foundations in Public Health	EPI 820 Epidemiology in Public Health	BIOS 806 Biostatistics I*	BIOS 808 Biostatistics II*	Dissertation 999 BIOS, ENV, EPI, HPRO, HSRA	Other Learning Experiences
10. Demonstrate knowledge of potential conflicts of interest encountered by practitioners, researchers, and organizations.	P					Doctoral Seminar

*Students in the Biostatistics PhD program do not take BIOS 806 and BIOS 808 because a Masters degree with these or equivalent courses is required for enrollment. **The Environmental Health, Occupational Health, and Toxicology program does not require the Doctoral Seminar. It does require ENV 970 Seminar.

PhD in Biostatistics Program Competencies: *Upon graduation, a student with a Doctor of Philosophy in Biostatistics should be able to...*

Table 2.6.1.14. Courses and other learning experiences by which the competencies are met in the **Biostatistics PhD program**

Competencies	BIOS 918 Biostat Linear Models	BIOS 924 Biostat Theory & Models for Survival Data	BIOS 918 Theory of Generalized Linear & Mixed Models in Biostat	STAT 980 Advanced Probability	STAT 982 Advanced Inference I	STAT 983 Advanced Inference II	Other Learning Experiences
1. Serve as an expert biostatistician on a collaborative team of investigators addressing a research question							
A. Acquire knowledge and skills in advanced statistical methodologies to collaborate without supervision with research investigators	P	P	P	R	R	R	
B. Formulate a research question in statistical terms	P	P	P	R	R	R	Collaborate as Res Assistant on a Res Team; EPI 820 Epi in PH; HPRO 830 Found of PH
C. Communicate effectively with biomedical and public health experts, relying upon a basic understanding of human health and disease and the related basic sciences	R	R	R				Cognate Field Courses (6 cr); Collaborate as Res Assistant on a Res Team; EPI 820 Epi in PH; HPRO 830 Found of PH
D. Construct an appropriate study design to address a research question, and determine an associated sample size based on statistical power considerations	P	P	P		R	R	
E. Become proficient in at least one commonly used statistical software package	P	P	P				
F. Examine data quality and verify data values to create consistent, reliable information	P	P	P				

Competencies	BIOS 918 Biostat Linear Models	BIOS 924 Biostat Theory & Models for Survival Data	BIOS 918 Theory of Generalized Linear & Mixed Models in Biostat	STAT 980 Advanced Probability	STAT 982 Advanced Inference I	STAT 983 Advanced Inference II	Other Learning Experiences
G. Protect information from unauthorized access and use	P	P	P				HPRO 830 Found of PH
H. For a particular data set, when addressing a biomedical or public health question:							
1. Choose and justify an appropriate statistical model	P	P	P				
2. Verify the model assumptions, implement the model, and correctly interpret the results of the analysis	P	P	P				
3. Document the analysis and results in a reproducible way	P	P	P				
4. Present in writing and orally a summary of the study results and their interpretation	P	P	P				Collaborate as Res Assistant on a Res Team; Doctoral Seminar; EPI 820 Epi in PH; HPRO 830 Found of PH
2. Successfully conduct and disseminate original research on the theory and methodology of biostatistics							
A. Critically review and interpret the statistical literature relevant to a particular methodological area	P	P	P	P	P	P	
B. Identify important methodological problems (e.g., through participation in collaborative research)	P	P	P	P	P	P	
C. Formulate methodological questions and develop novel statistical methods addressing these questions	P	P	P	P	P		
D. Determine the statistical properties of new methods using mathematical and computer tools	P	P	P	P	P	P	

Competencies	BIOS 918 Biostat Linear Models	BIOS 924 Biostat Theory & Models for Survival Data	BIOS 918 Theory of Generalized Linear & Mixed Models in Biostat	STAT 980 Advanced Probability	STAT 982 Advanced Inference I	STAT 983 Advanced Inference II	Other Learning Experiences
E. Apply innovative statistical theory and methods to gain novel insights into biomedical or public health-related questions	P	P	P				
F. Demonstrate deep knowledge of (at least) one statistical area, and general knowledge in the most important fields of biostatistics	P	P	P	R	R	R	PhD Dissertation
G. Write and submit for publication peer-reviewed article(s) that effectively communicate novel theoretical and/or methodological developments	P	P	P	P	P	P	PhD Dissertation
H. Clearly present biostatistical research findings in a research seminar	P	P	P	R	R	R	BIOS Dept Journal Club
3. Effectively teach biostatistics to biostatistical and non-biostatistical audiences							
A. Identify biostatistical skills needed by a group of students							TA-ship; M2 ICE Small Group Facilitators
B. Communicate to students the importance and utility of the material and an appreciation of it							TA-ship; M2 ICE Small Group Facilitators
C. Demonstrate a commitment to student learning							TA-ship; M2 ICE Small Group Facilitators
D. Communicate clearly and effectively in oral and written materials		R					TA-ship; M2 ICE Small Group Facilitators
4. Develop a public health perspective on research							
A. Recognize the causes of morbidity and mortality and the strategies for	R	R	R				Cognate Field Courses (6 cr);

Competencies	BIOS 918 Biostat Linear Models	BIOS 924 Biostat Theory & Models for Survival Data	BIOS 918 Theory of Generalized Linear & Mixed Models in Biostat	STAT 980 Advanced Probability	STAT 982 Advanced Inference I	STAT 983 Advanced Inference II	Other Learning Experiences
promoting health and preventing disease and disability in a population							Collaborate as Res Assistant on a Res Team; EPI 820 Epi in PH; HPRO 830 Found of PH
B. Identify the scientific methods used in public health research and practice	R	R	R				Cognate Field Courses (6 cr); Collaborate as Res Assistant on a Res Team; EPI 820 Epi in PH; HPRO 830 Found of PH
C. Effectively translate statistical ideas and concepts to public health collaborators	R	R	R				Cognate Field Courses (6 cr); Collaborate as Res Assistant on a Res Team; EPI 820 Epi in PH; HPRO 830 Found of PH
5. Demonstrate knowledge and expertise in a cognate field other than biostatistics							
A. Identify the quantitative aspects of important scientific problems in an area of biomedical or public health research outside of biostatistics/statistics (i.e., in a cognate field) and develop innovative biostatistical methodology to address the problems	R	R	R				Cognate Field Courses (6 cr)
B. Demonstrate proficiency in the language of the cognate field							Cognate Field Courses (6 cr)
C. Review and evaluate the use of biostatistical methods in the cognate field of study	R	R	R				Cognate Field Courses (6 cr)

Competencies	BIOS 918 Biostat Linear Models	BIOS 924 Biostat Theory & Models for Survival Data	BIOS 918 Theory of Generalized Linear & Mixed Models in Biostat	STAT 980 Advanced Probability	STAT 982 Advanced Inference I	STAT 983 Advanced Inference II	Other Learning Experiences
D. Engage in collaborations across fields and disciplines related to the cognate field	R	R	R				Collaborate as Res Assistant on a Res Team; Cognate Field Courses (6 cr)

PhD in Environmental Health, Occupational Health, & Toxicology Program Competencies: *Upon graduation, a student with a Doctor of Philosophy in Environmental Health, Occupational Health, and Toxicology (Environmental and Occupational Hygiene Track, Occupational Biomechanics Track, and Toxicology Track) should be able to...*

Table 2.6.1.15. Courses and other learning experiences by which the competencies are met in the EHOHT **Environmental and Occupational Hygiene Track**

Competencies	ENV 800 Elements of Industrial Safety for Health Sciences	ENV 804 Ergonomics and Human Factors for Health Sciences	ENV 810 Principles of Occupational and Environmental Health	ENV 816 Environmental Exposure Assessment	ENV 840 Climate Change, Sustainability, and Public Health	ENV 875 Chemical Carcinogenesis
1. Critically evaluate characteristics and trends in U.S. agriculture			P		R	
2. Integrate and analyze available data resources on agricultural production and populations to reduce agricultural and environmental injuries and illnesses.			P		R	P
3. Critically evaluate agricultural safety programs and their strengths and weaknesses.			P			
4. Categorize environmental factors that affect the health of a community, including the biological effects of these exposures.			P	R	R	R
5. Develop strategies to implement public health policy to control risk.				R		P
6. Develop and critique intervention strategies relative to agriculture and the environment.				R		
7. Critically evaluate data to propose strategies to reduce environmental health hazards.			P	R		
8. Identify and apply effective risk communication strategies and techniques to solve environmental health problems.			P	R		
9. Critically synthesize current literature to formulate research questions				R		
10. Critically evaluate data to develop methods of risk assessment and control.	P	R	R			
11. Apply risk assessment and control methods in a field study of health hazards	P			P		

Competencies	ENV 800 Elements of Industrial Safety for Health Sciences	ENV 804 Ergonomics and Human Factors for Health Sciences	ENV 810 Principles of Occupational and Environmental Health	ENV 816 Environmental Exposure Assessment	ENV 840 Climate Change, Sustainability, and Public Health	ENV 875 Chemical Carcinogenesis
12. Design and execute a field study of occupational and environmental	P			P		

Additional courses and other learning experiences by which the competencies are met in the EHOHT Environmental and Occupational Hygiene Track (continued)

Competencies	ENV 888 Principles of Toxicology	ENV 902 Special Topics	ENV 950 Advanced Toxicology	ENV 970 Seminar	ENV 999 Doctoral Dissertation	Comprehensive Exam
1. Critically evaluate characteristics and trends in U.S. agriculture		R		R		
2. Integrate and analyze available data resources on agricultural production and populations to reduce agricultural and environmental injuries and illnesses.				R	R	
3. Critically evaluate agricultural safety programs and their strengths and weaknesses.				R		
4. Categorize environmental factors that affect the health of a community, including the biological effects of these exposures.	R		R	R		
5. Develop strategies to implement public health policy to control risk.				R		
6. Develop and critique intervention strategies relative to agriculture and the environment.				P		
7. Critically evaluate data to propose strategies to reduce environmental health hazards.				P		
8. Identify and apply effective risk communication strategies and techniques to solve environmental health problems.				P		
9. Critically synthesize current literature to formulate research questions				P	P	R
10. Critically evaluate data to develop methods of risk assessment and control.						

Competencies	ENV 888 Principles of Toxicology	ENV 902 Special Topics	ENV 950 Advanced Toxicology	ENV 970 Seminar	ENV 999 Doctoral Dissertation	Comprehensive Exam
11. Apply risk assessment and control methods in a field study of health hazards						
12. Design and execute a field study of occupational and environmental						

Table 2.6.1.16. Courses and other learning experiences by which the competencies are met in the EHOHT **Occupational Biomechanics Track**

Competencies	ENV 804 Ergonomics and Human Factors for Health Sciences	ENV 806 Biostatistics I	ENV 808 Biostatistics II	ENV 970 Seminar	ENV 999 Doctoral Dissertation
1. Apply the principles of biomechanical analysis to common work tasks.	P	R	R	R	R
2. Integrate basic anatomical and mechanical principles to the analysis of human movement in common work tasks.	P			R	R
3. Critically evaluate biomechanical data of an individual during common work tasks.	P	R	R	R	R
4. Utilize instrumentation and techniques to measure and analyze movement to address public health issues and to conduct occupational biomechanical research.	P	R	R	R	R
5. Critically evaluate the need for and the limitations of occupational biomechanics in the analysis of standards for manual materials handling.	P	R	R	R	R
6. Execute appropriate biomechanical principles to current models and guidelines used in occupational ergonomics.	R	R	R	R	R
7. Critically evaluate data to propose future research in the development of new models and ergonomic guidelines.	R	R	R	R	R
8. Critically analyze and evaluate performance in occupational settings to avoid injury and improve performance.	R	R	R	R	R
9. Integrate and apply appropriate theories to describe and analyze human movement, with emphasis on variability of human movement, the acquisition of motor skills, and external factors that can affect motor performance.					R
10. Develop and apply appropriate experimental and clinical tools and procedures to assess motor control.				R	R
11. Articulate how the nervous system is associated with motor control and its functions.					R
12. Critically evaluate how attentional processes can influence motor performance.					R

Additional courses and other learning experiences by which the competencies are met in the EHOHT **Occupational Biomechanics Track**
(continued)

Competencies	PE 8400 Motor Learning	PE 8410 Motor Control	PE 8450 Advanced Biomechanics
1. Apply the principles of biomechanical analysis to common work tasks.			R
2. Integrate basic anatomical and mechanical principles to the analysis of human movement in common work tasks.			R
3. Critically evaluate biomechanical data of an individual during common work tasks.			R
4. Utilize instrumentation and techniques to measure and analyze movement to address public health issues and to conduct occupational biomechanical research.			R
5. Critically evaluate the need for and the limitations of occupational biomechanics in the analysis of standards for manual materials handling.			R
6. Execute appropriate biomechanical principles to current models and guidelines used in occupational ergonomics.			p
7. Critically evaluate data to propose future research in the development of new models and ergonomic guidelines.			p
8. Critically analyze and evaluate performance in occupational settings to avoid injury and improve performance.			R
9. Integrate and apply appropriate theories to describe and analyze human movement, with emphasis on variability of human movement, the acquisition of motor skills, and external factors that can affect motor performance.	P	R	
10. Develop and apply appropriate experimental and clinical tools and procedures to assess motor control.		P	
11. Articulate how the nervous system is associated with motor control and its functions.	P	R	
12. Critically evaluate how attentional processes can influence motor performance.	R	P	

Table 2.6.1.17. Courses and other learning experiences by which the competencies are met in the **EHOHT Toxicology Track**

Competencies	ENV 800 Elements of Industrial Safety for Health Sciences	ENV 804 Ergonomics and Human Factors for Health Sciences	ENV 810 Principles of Occupational and Environmental Health	ENV 816 Environmental Exposure Assessment	ENV 840 Climate Change, Sustainability, and Public Health	ENV 875 Chemical Carcinogenesis
1. Assess responses to environmental and occupational toxins.						R
2. Implement dose-response characteristics to correlate a chemical exposure with a toxic response.						R
3. Predict the severity of a toxic response to a particular toxicant by using the principles of absorption and distribution				R		R
4. Critically analyze data to correlate targeted organ toxicity with a specific toxicant exposure.						R
5. Implement epidemiological data and risk assessment protocols to predict the toxic responses to environmental and workplace exposures.				R		R
6. Assess government regulatory policies and their impact on industries and on human health.				P		
7. Critically evaluate the scientific toxicological literature.						R
8. Formulate appropriate research questions based on critical evaluation of scientific literature.						
9. Develop doctoral-level proficiency in oral and written assessment.				R		
10. Design experimentation to determine the relationship between a specific chemical exposure and a toxic response.				R		R

Additional courses and other learning experiences by which the competencies are met in the EHOHT **Toxicology Track** (continued)

Competencies	ENV 888 Principles of Toxicology	ENV 902 Special Topics	ENV 950 Advanced Toxicology	ENV 970 Seminar	ENV 999 Doctoral Dissertation	Comprehensive Exam
1. Assess responses to environmental and occupational toxins.	P	R		R		
2. Implement dose-response characteristics to correlate a chemical exposure with a toxic response.	P	R		R		
3. Predict the severity of a toxic response to a particular toxicant by using the principles of absorption and distribution	P	R				
4. Critically analyze data to correlate targeted organ toxicity with a specific toxicant exposure.	P	R	R			
5. Implement epidemiological data and risk assessment protocols to predict the toxic responses to environmental and workplace exposures.	P			R		
6. Assess government regulatory policies and their impact on industries and on human health.	R					
7. Critically evaluate the scientific toxicological literature.	P	R	R	R		
8. Formulate appropriate research questions based on critical evaluation of scientific literature.		R	P	R		
9. Develop doctoral-level proficiency in oral and written assessment.			P			
10. Design experimentation to determine the relationship between a specific chemical exposure and a toxic response.	P		R	R		

PhD in Epidemiology Program Competencies: *Upon graduation, a student with a Doctor of Philosophy in Epidemiology should be able to...*

Table 2.6.1.18. Courses and other learning experiences by which the competencies are met in the **Epidemiology PhD program**

Competencies	EPI 812 Chronic Disease Epi	EPI 820 Epi in Public Health	EPI 835 Health Information & Surveillance for Public Health Practice	EPI 890 Maternal & Child Health Epi	EPI 910 Research Grant Proposal Development	EPI 941 Epi Methods in Applied Clinical Research I	EPI 942 Epi Methods in Applied Clinical Research II	EPI 845 Principles of Epi Research	EPI 945 Epi Research Methods
Recognize public health problems and the epidemiologic role in addressing them.	R	P	R	R		R	R	R	R
Develop comprehensive knowledge of epidemiologic concepts.		P				R	R	P	P
Critically evaluate scientific literature using epidemiologic principles and methods.	R	P		R	R	R	R	P	P
Generate and evaluate hypotheses for epidemiologic research.	P			P	P			P	P
Identify and discuss advantages and limitations of epidemiologic study designs, including practical aspects of their use and trade-offs in particular studies.	P	P		P	R	R	R	P	P
Independently design and implement epidemiologic investigations to answer specific research questions.					P			R	R
Recognize potential sources of bias in estimating population parameters, and implement strategies to control biases and reduce random error.	R	P		R		R	R	P	P
Identify appropriate data sources to answer specific research questions.	P	R		P	R	R	R	R	R

Competencies	EPI 812 Chronic Disease Epi	EPI 820 Epi in Public Health	EPI 835 Health Information & Surveillance for Public Health Practice	EPI 890 Maternal & Child Health Epi	EPI 910 Research Grant Proposal Development	EPI 941 Epi Methods in Applied Clinical Research I	EPI 942 Epi Methods in Applied Clinical Research II	EPI 845 Principles of Epi Research	EPI 945 Epi Research Methods
Synthesize and communicate epidemiologic concepts, information from the scientific literature and original ideas to develop a competitive grant proposal.					P				

PhD in Health Promotion and Disease Prevention Research Program Competencies: *Upon graduation, a student with a Doctor of Philosophy in Health Promotion and Disease Prevention Research should be able to...*

Table 2.6.1.19. Courses and other learning experiences by which the competencies are met in the **HPDPR PhD Program, Part 1**

Competencies	HPRO 827 Interventions in HP	HPRO 840 HP Program Planning	HPRO 860 Health Behavior	HPRO 901 Advanced Theories in HP	HPRO 902 Complex System Modeling	EPI 910 Research Proposal Development	HPRO 925 Scientific Writing	HPRO 825 Public Health Ethics
1. Conceptualize quantitative and qualitative research that is ethical, rigorous, and innovative and is based on an advanced knowledge of health promotion theories and disease prevention.	R	P	R	P	P		P	R
2. Conduct rigorous quantitative and qualitative research based on methodologically sound principles and analytical techniques.		R		R	P	Reports: P Data: NA	P	
3. Conduct needs assessment related to quality of life, health outcomes, and health behaviors in communities or priority population groups.	R	P			R			
4. Develop measureable objectives and evidence-based interventions in response to needs assessment to promote health and prevent disease among targeted populations.	P	P		P	P	Design: P Conduct: NA		
5. Implement evidence-based and high-impact health promotion and disease prevention interventions that effectively target policy, environmental, community, or individual health behavior change.	R	P	R	R	R			
6. Evaluate the reach, effectiveness, cost, and impact of evidence-based health promotion and disease prevention interventions and programs using scientifically sound study design, indicators, and analytical techniques.	P	R	R	R	P		P	

Competencies	HPRO 827 Interventions in HP	HPRO 840 HP Program Planning	HPRO 860 Health Behavior	HPRO 901 Advanced Theories in HP	HPRO 902 Complex System Modeling	EPI 910 Research Proposal Development	HPRO 925 Scientific Writing	HPRO 825 Public Health Ethics
7. Disseminate and communicate results of research to a broad audience through such avenues as scientific conferences, community forums, and peer-reviewed journals.		R			P		P	

Table 2.6.1.20. Courses and other learning experiences by which the competencies are met in the **HPDPR PhD Program, Part 2**

Competencies	HPRO 805 Applied Research	BIOS 806 Biostats I	BIOS 808 Biostats II	BIOS 810 Intro to SAS Programming	Epi 820 Epi of Public Health	Epi 821 Fundamentals of Epi	HPRO 875 Public Health Program Evaluation	HPRO 910 Humanistic & Qualitative Research	HPRO 996 Directed Reading & Research
1. Conceptualize quantitative and qualitative research that is ethical, rigorous, and innovative and is based on an advanced knowledge of health promotion theories and disease prevention.	P		R	R				P	R
2. Conduct rigorous quantitative and qualitative research based on methodologically sound principles and analytical techniques.	R	R	P		R	P	R	P	R
3. Conduct needs assessment related to quality of life, health outcomes, and health behaviors in communities or priority population groups.	R		R					R	R
4. Develop measurable objectives and evidence-based interventions in response to needs assessment to promote health and prevent disease among targeted populations.			R		R				R
5. Implement evidence-based and high-impact health promotion and			R				R		R

Competencies	HPRO 805 Applied Research	BIOS 806 Biostats I	BIOS 808 Biostats II	BIOS 810 Intro to SAS Programming	Epi 820 Epi of Public Health	Epi 821 Fundamentals of Epi	HPRO 875 Public Health Program Evaluation	HPRO 910 Humanistic & Qualitative Research	HPRO 996 Directed Reading & Research
disease prevention interventions that effectively target policy, environmental, community, or individual health behavior change.									
6. Evaluate the reach, effectiveness, cost, and impact of evidence-based health promotion and disease prevention interventions and programs using scientifically sound study design, indicators, and analytical techniques.	P	R	R		R	P	P		R
7. Disseminate and communicate results of research to a broad audience through such avenues as scientific conferences, community forums, and peer-reviewed journals.	R		R			R		R	R

Competencies	HSRA 810 US Healthcare System	HSRA 830 Health Care Org Theory & Behavior	HSRA 860 Health Economics	HSRA 872 Health Care Finance	HSRA 873 Health Service Administration	HSRA 874 Health Policy	HSRA 920 Quantitative Methods in HSR	HSRA 930 Design of Health Services Research
8. Know how to collect primary health and health care data obtained by survey, qualitative, or mixed methods.							R	
9. Use appropriate analytical methods to clarify associations between variables and to delineate causal inferences.							P	
10. Appropriately interpret the results of data analysis and discuss the implications for policy and practice, to support public health decision-making.							P	
11. Effectively communicate the findings and implications of health services research through multiple modalities to technical and lay audiences.		P			R	R		
12. Implement research protocols with standardized procedures that ensure reproducibility of the science and ensure the ethical and responsible conduct of research in the design, implementation, and dissemination of health services research.					R			
13. Articulate the importance of collaborating with policymakers, organizations, and communities to plan, conduct, and translate health services research into policy and practice.		R		R		P		

Additional courses and other learning experiences by which the competencies are met in the **HSRAP PhD Program** (continued)

Competencies	HPRO 830 Foundations of Public Health	BIOS 806 Biostatistics I	BIOS 808 Biostatistics II	HPRO 910 Qualitative Research Methods	EPI 820 Epidemiology in Public Health
1. Apply alternative theoretical and conceptual models from a range of relevant disciplines to health services research.	R				
2. Apply in-depth multidisciplinary knowledge and skills relevant to health services research.	R				R
3. Utilize the knowledge of the structures, performance, quality, policy, and environmental context of health and health care to formulate solutions for health policy problems.				R	
4. Critically evaluate evidence, synthesize findings, and draw inferences from literature relevant to health services research.		R	R		
5. Pose innovative and important research questions, informed by systematic reviews of the literature, stakeholder needs, and relevant theoretical and conceptual models.	R	R	R		
6. Use a conceptual model to specify study constructs for a health services research question and develop variables that reliably and validly measure these constructs.		R	R		
7. Select appropriate interventional (experimental and quasi-experimental) or observational (qualitative, quantitative, and mixed methods) study designs to address specific health services research questions.		R	R	P	P
8. Know how to collect primary health and health care data obtained by survey, qualitative, or mixed methods.				P	
9. Use appropriate analytical methods to clarify associations between variables and to delineate causal inferences.		P	P		R
10. Appropriately interpret the results of data analysis and discuss the implications for policy and practice, to support public health decision-making.	R	P	P		R
11. Effectively communicate the findings and implications of health services research through multiple modalities to technical and lay audiences.	P				
12. Implement research protocols with standardized procedures that ensure reproducibility of the science and ensure the ethical and responsible conduct of research in the design, implementation, and dissemination of health services research.					P
13. Articulate the importance of collaborating with policymakers, organizations, and communities to plan, conduct, and translate health services research into policy and practice.	P				R