

## Division: Environmental and Occupational Health Sciences

Students must demonstrate attainment of a minimum of five competencies (not to exceed 10), consisting of:

- At minimum, three foundational competencies.
- At minimum, one division and/or concentration(s) competency.

Please note: competencies should only be listed once and focused on your division/concentration. Do not use a competency for more than one activity. Do not indicate a global health competency if you do not have a concentration in that area.

### MPH FOUNDATIONAL COMPETENCIES

#### Evidence-based Approaches to Public Health

- F1.** Apply epidemiological methods to the breadth of settings and situations in public health practice.
- F2.** Select quantitative and qualitative data collection methods appropriate for a given public health context
- F3.** Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.
- F4.** Interpret results of data analysis for public health research, policy or practice.

#### Public Health & Health Care Systems

- F5.** Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings.
- F6.** Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels.

#### Planning & Management to Promote Health

- F7.** Assess population needs, assets and capacities that affect communities' health.
- F8.** Apply awareness of cultural values and practices to the design or implementation of public health policies or programs.
- F9.** Design a population-based policy, program, project or intervention.
- F10.** Explain basic principles and tools of budget and resource management.
- F11.** Select methods to evaluate public health programs.

#### Policy in Public Health

- F12.** Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence.
- F13.** Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes.
- F14.** Advocate for political, social or economic policies and programs that will improve health in diverse populations.
- F15.** Evaluate policies for their impact on public health and health equity.

#### Leadership

- F16.** Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making.
- F17.** Apply negotiation and mediation skills to address organizational or community challenges.

#### Communication

- F18.** Select communication strategies for different audiences and sectors.
- F19.** Communicate audience-appropriate public health content, both in writing and through oral presentation.
- F20.** Describe the importance of cultural competence in communicating public health content.

#### Interprofessional Practice

- F21.** Perform effectively on interprofessional teams.

#### Systems Thinking

- F22.** Apply systems thinking tools to a public health issue.

### GLOBAL HEALTH LEARNER OUTCOMES

- G1.** Demonstrate knowledge of the Social Determinants of Health (SDH) and their contribution to the health of populations globally, as well as the influence of SHD (including economic, political and environmental) on programmatic approaches in international settings.
- G2.** Demonstrate a critical understanding of the major causes of morbidity and mortality around the world, and explain how the risk for disease varies within and across regions.
- G3.** Describe the roles and relationships of the major entities influencing global health and development, and how they work to address communicable and non-communicable diseases, including injury, given context specific challenges within countries and regions.
- G4.** Demonstrate an ability to use systems thinking to analyze programs at the local, national and international levels.
- G5.** Apply ethical reasoning to the design, implementation, or evaluation of global health programs, policies, or practice.

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### **ENVIRONMENTAL & OCCUPATIONAL HEALTH SCIENCES (GENERALIST) COMPETENCIES**

- EOHS1.** Apply scientific principles to characterize and environmental or occupational health problem.
- EOHS2.** Describe the implications of environment and occupation for equity and justice in a population.
- EOHS3.** Critically evaluation causal associations between environmental and occupational exposures and diseases.
- EOHS4.** Anticipate implications of an emerging environmental or occupational health problem.
- EOHS5.** Assess population exposure and risk arising from an occupational or environmental health problem.
- EOHS6.** Recommend feasible interventions to improve or protect the environmental or occupational health of a population.

### **ABET-ACCREDITED INDUSTRIAL HYGIENE COMPETENCIES**

- IH1.** Apply scientific, mathematical and statistical principles to anticipate, recognize, evaluate and control an occupational hazard.
- IH2.** Interpret an occupational hazard and control in the context of occupational and environmental regulations.
- IH3.** Recommend feasible interventions, programs or controls to address an occupational health need.
- IH4.** Anticipate adverse health outcomes as a function of dose, route of exposure, and the toxicological properties of the hazard.
- IH5.** Communicate with workers and other professionals to obtain and convey occupational health and safety information.

### **OCCUPATIONAL SAFETY COMPETENCIES**

- OS1.** Conduct a safety inspection of a workplace using qualitative and quantitative tools and applicable standards, regulations and codes.
- OS2.** Review process, work practice, and/or task changes and identify possible impacts on worker safety.
- OS3.** Use exposure and injury data to identify emerging and unrecognized hazards.
- OS4.** Identify and critique approaches to reduce workplace safety hazards.
- OS5.** Apply a continuous improvement process to the management of workplace health and safety.
- OS6.** Apply adult learning theory to safety training methodology.

### **WATER QUALITY AND HEALTH COMPETENCIES**

- WQH1.** Apply principles of basic and applied sciences to characterize a water quality problem and its potential health implications.
- WQH 2.** Evaluate the strengths and limitations of surface water, ground water, and drinking water monitoring frameworks used in advanced economies.
- WQH 3.** Evaluate potential public health interventions to improve or protect population health from water and sanitation problems in low-income countries that have limited public health infrastructure.
- WQH 4.** Evaluate whether an acute or chronic health problem may be attributed to insufficient water quantity or quality.
- WQH 5.** Develop approaches to reducing the impact of climate change and other emerging threats to water quality and quantity for regions that vary geographically (flood prone vs drought prone, coastal vs. inland) and that vary in terms of economic development.

### **OCCUPATIONAL & ENVIRONMENTAL MEDICINE COMPETENCIES**

- OEM1.** Apply core foundational knowledge of toxicological principles to Occupational Medicine and Environment Health.
- OEM2.** Use exposure and injury data to identify emerging and unrecognized hazards.
- OEM3.** Demonstrates understanding of core principles of industrial hygiene, ergonomics, occupational safety, and risk/hazard control and communication (e.g. recognition of regulatory standards and guidelines).
- OEM4.** Identifies relevant regulatory agencies with jurisdiction for regulating exposure in the geographic area and industry/agent.
- OEM5.** Demonstrates and apply understanding of emergency preparedness programs from a medical perspective.
- OEM6.** Demonstrates compassion, integrity, and respect for others, as well as sensitivity and responsiveness to diverse worker and community-based populations.