### PUBLIC HEALTH, EPIDEMIOLOGY (PHEP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

### Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (http://louisville.edu/bursar/tuitionfee/).

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Term Typically Offered</th>
<th>Description</th>
<th>Corequisite(s)</th>
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<tbody>
<tr>
<td>PHEP 200. Disease Detectives</td>
<td>3 Units</td>
<td>Fall Only</td>
<td>This course covers the history of epidemics, the evolution of epidemiology, the role of public health, and concepts of disease transmission and surveillance. When an epidemic occurs within a population, public health professionals rely upon epidemiology to identify potential causes. The epidemiological approach provides public health professionals a set of tools to objectively investigate disease with regard to population, place and time. While these methods continue to evolve, epidemiology has played a constant role in improving public health for more than a century. This course will show students how the epidemiological approach has been applied to address both historical and current epidemics of infectious and chronic diseases. For class offerings for a specific term, refer to the Schedule of Classes (<a href="http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm">http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm</a>)</td>
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<tr>
<td>PHEP 300. Epidemics, Pandemics and Syndemics</td>
<td>3 Units</td>
<td>Spring Only</td>
<td>This course provides an overview of the definition, measurement and prediction of epidemic and pandemic events. It is not generally well recognized that these terms, and the methods used to describe their course, can be applied to slow-moving noncommunicable diseases, such as obesity, heart disease and cancer, as well as outbreaks of drug abuse, violence, or mass hysteria, in addition to acute infectious diseases such as COVID-19. The course will examine the dynamics of these outbreaks. Why do they start, what makes them take off, and why do they decline? In addition, the concept of the &quot;syndemic&quot;, or the confluence and synergism in time and space of two or more outbreaks, will be examined. For class offerings for a specific term, refer to the Schedule of Classes (<a href="http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm">http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm</a>)</td>
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### Additional Courses

- **PHEP 301. Global Public Health - SBH, D2**
  - Term Typically Offered: Fall, Spring
  - Description: The course will provide an overview of the factors that produce global health challenges, including demographic changes, conflict, human rights abuses, migration, travel, food production and distribution, water resources, and market forces and economic factors. Students will become familiar with the role of government and non-governmental organizations in identifying, understanding, and addressing global health issues.
  - For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

- **PHEP 305. Psychiatric Epidemiology**
  - Term Typically Offered: Spring Only
  - Description: This course will provide students with an understanding of how psychiatric disorders are addressed in the United States. It will focus on current research and theories surrounding the operationalization, prevention, and treatment of psychiatric disorders from a developmental perspective. Students will also learn about public health and community-based approaches to addressing psychiatric disorders. Additional topics include mental health services and policy over the last century.
  - For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

- **PHEP 311. Environment and Cancer Epidemiology**
  - Term Typically Offered: Spring Only
  - Description: The course will provide students with an understanding of the environment and cancer epidemiology. It will cover topics such as the distribution, water resources, and market forces and economic factors. Students will also learn about public health and community-based approaches to addressing psychiatric disorders. Additional topics include mental health services and policy over the last century.
  - For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

- **PHEP 341. Environmental Epidemiology**
  - Term Typically Offered: Spring Only
  - Description: This course explores epidemiologic concepts and methods related to environmental health. It is intended as a companion course to be taken concurrently with PHEP 441. Concepts introduced in the PHEP 441 course will be expanded upon using examples relevant to environmental health. In addition, topics unique to environmental epidemiology will be covered.
  - For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
PHEP 320. Climate Change, Environmental Degradation and the Epidemiology of Global Health 3 Units
Term Typically Offered: Fall Only
Description: This course will review evidence for climate change and environmental disruption, and evaluate their potential impact on the future of global public health and the policies and actions we must enact to mitigate their effects. Scientific evidence suggests that climate change is occurring and is having widespread impacts on weather, including increases in both drought and hurricane frequency, and rising sea levels. Environmental degradation is accelerating also due to deforestation, agriculture, mining, and the growth of megacities. Taken together these changes may disrupt the balance of ecosystems across the world, increasing risk for multiple adverse health outcomes, including future zoonotic pandemics.
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PHEP 325. Introduction to Maternal and Child Health 3 Units
Term Typically Offered: Spring Only
Description: Maternal and Child Health (MCH) is the professional and academic field that focuses on the determinants, mechanisms and systems that promote and maintain the health, safety, well-being, and appropriate development of children and their families in diverse communities, with the goals of improving global health in all settings. Students will examine and address causes of maternal and infant death, malnutrition, and disease with population-scale preventive health, health policies and programs, immunization, and early childhood education programs. This course introduces MCH, including history, programs and policies, research, and global challenges, blending weekly lectures with global case studies.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

PHEP 341. Epidemiological Concepts and Methods for Public Health 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): PHST 301 or MATH 109.
Description: The course explores fundamental epidemiologic concepts and methods used to examine the distribution and determinants of health and disease in and between populations.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

PHEP 446. Applied Data Analysis for Epidemiology 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): At least a B in PHEP 341, or permission of instructor.
Description: This course will introduce students to epidemiologic methods for data analysis. Data from three types of epidemiologic study designs will be explored and analyzed. Epidemiologic hypotheses will be tested using simple analysis, stratified analysis, and multivariable modeling. The student will draw a causal diagram to illustrate causal pathways. Confounding, interaction and mediation will be reviewed and assessed as part of the analytic process. The student will become proficient in R statistical software over the course of the semester. The student will also do human subjects research training and gain certification. By the end of the course, the student should have the skills and tools necessary to conduct an independent epidemiologic res
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