

# Population Health (POPH)

## Courses

### **POPH 001 Introduction to Population and Public Health 4 Credits**

Despite significant advances in medicine and public health, inequities in health persist. Understanding health on a population level is an approach that seeks to improve the health of the whole population, unravel variations in health outcomes, and to identify effective strategies for reducing or eliminating inequities. The purpose of this course is to provide students with an understanding of: 1) how population and public health are defined and measured; and 2) the determinants of population health.

### **POPH 002 Population Health Research Methods & Application 4 Credits**

This course provides students with fundamental principles of research methods relevant to population health and the translation of research into practice. Through this course, we will review a range of study designs, including experimental and observational studies, mixed methods, and comparative qualitative case study methods. In addition, students will obtain the skills needed to translate research into practice for multiple stakeholder groups.

**Prerequisites:** POPH 001

### **POPH 003 Justice, Equity, and Ethics in Population Health 3 Credits**

The goal is to examine the historical and emerging issues in population health ethics. The course will introduce both the historical contexts and contemporary issues in population health dilemmas. Topics of interest include: 1) resource distribution and social justice; 2) self-sufficiency and paternalism; 3) health promotion & disease prevention; 4) patients' right to privacy; 5) research integrity; and 6) newly emerging issues. Students will debate, research, and propose solutions and intervention strategies through group discussions, role play, and presentations.

### **POPH 010 Seminar: Population Health 1 Credit**

This one-credit special topics seminar will focus on the development of Population Health relevant skills in the areas of communication, professional development, mentorship and leadership, proposal development, policy and advocacy and community engagement and coalitions.

**Repeat Status:** Course may be repeated.

### **POPH 012 Seminar: Ethics in Population Health 1 Credit**

This seminar will introduce students to ethical concepts and critical issues pertaining to the ethical inclusion of human subjects in population health research. This course will provide opportunities for writing about, discussion of, and case-based learning around current and historical perspectives on population health research. During this course, students will complete the necessary training for conducting human subjects research at Lehigh University.

### **POPH 101 History of Population Health 3 Credits**

This course introduces students to the development of population health as a convergent science. Students will learn about the evolution of population health interests, normative beliefs in service delivery, and policy at the international and domestic level. The principles, ethical values and services enforced by law will be learned. Students will explore the initiatives, collectively achieved among various sectors, addressing the determinants of health. We conclude by addressing future population health challenges, such as the environment, non-communicable diseases, and inequalities.

### **POPH 104 Careers in Population Health 3 Credits**

In this interdisciplinary seminar, students will be exposed to individuals working in various disciplines with the field of population health in academic positions, government and non-governmental organizations, community-based organizations, medical establishments, industry, and more. Through the eyes of these professionals, students will learn of career opportunities in these growing fields of study and will begin to chart their own career paths.

### **POPH 105 Introduction to Maternal and Child Health 3 Credits**

The course introduces the student to the Maternal and Child Health field. Students will examine the multi-dimensional determinants of maternal and child health issues using a Life Course approach. Students will also explore the roles of research, programs, policy, and advocacy in the reduction of maternal and child health disparities.

### **POPH 106 Global Environment and Human Welfare 3 Credits**

This course investigates the present understanding of multiple pollution agents and their effects on human health and well-being. The students will examine the history, the emergence, the known risks from exposure to specific pollutants through multiple media (e.g. air, water, food) with a particular focus on air pollution. Through readings, discussions, and a project, students are expected to cultivate a critical understanding of the risks posed by environmental pollutants on human health and identify knowledge gaps.

### **POPH 107 Sleep and Physical Activity in Population Health 3 Credits**

This course explores how physical activity (PA) and sleep impact population health. Students will evaluate the scientific literature on the role of PA and sleep in preventing chronic diseases, promoting mental health, and enhancing overall well-being. Through experiential research, students will also learn how to measure PA and sleep information. The course will examine how environmental, social, cultural, and policy-related factors influence PA and sleep behaviors in diverse populations.

**Prerequisites:** CGH 001

### **POPH 120 (BSTA 120, CGH 120, EPI 120) Independent Study or Research in Population Health 1-4 Credits**

This course can be directed readings or research in Population Health or an experiential learning experience that puts students's understanding of Population Health into practice. Department permission required.

**Repeat Status:** Course may be repeated.

### **POPH 126 Population Health and the Media 3 Credits**

This course explores the importance of the relationship that health organizations have with the media and the powerful role it can play in what a population deems important in public health. We will examine how mass media campaigns have been used to change behaviors: tobacco, alcohol and drug use; lowering risk factors for heart disease and diabetes; and even road safety to produce life-saving changes in large populations as well as to manage national and worldwide health crises.

### **POPH 130 Internship in Population Health 1-4 Credits**

In this introductory course, students will engage in supervised work in Population Health. Potential internship sites include government agencies, non profit organizations and the private sector. A written report is required and preceptor evaluation will be required. Department permission required.

**Repeat Status:** Course may be repeated.

### **POPH 150 Special Topics in Population Health 3-4 Credits**

In this course, students will engage in an intensive exploration of a topic of special interest that is not covered in other courses. Topics addressed will be at an intermediate level.

**Repeat Status:** Course may be repeated.

### **POPH 160 Population Health Study Abroad 1-3 Credits**

Population health focused course taken during an abroad experience.

**Repeat Status:** Course may be repeated.

### **POPH 195 1-4 Credits**

**Repeat Status:** Course may be repeated.

### **POPH 300 Apprentice Teaching 1-4 Credits**

**Repeat Status:** Course may be repeated.

### **POPH 301 Population Health Capstone (Proposal) 1-3 Credits**

In this writing intensive course, students will work closely with their academic advisor and site preceptor to develop a detailed proposal for a Population Health project. Department permission required. Students must complete 3 credits of Capstone Proposal.

**Repeat Status:** Course may be repeated.

**POPH 302 Population Health Capstone (Execution) 1-3 Credits**

In this course, students will implement and evaluate the Population Health project proposed in POPH 301. A final capstone report, oral presentation, and preceptor evaluation will be required. Department permission required. Students must complete 3 credits of Capstone Execution.

**Repeat Status:** Course may be repeated.

**Prerequisites:** POPH 301

**POPH 305 Honors Population Health Capstone (Proposal) 1-4 Credits**

In this writing intensive course, students will work closely with their academic advisor and site preceptor to develop a detailed proposal for a Population Health project. This course includes a weekly honors seminar. To qualify for honors, students must have a 3.5 major GPA and department permission. A total of 4 credits is required to complete the Capstone Proposal.

**Repeat Status:** Course may be repeated.

**POPH 306 Honors Population Health Capstone (Execution) 1-4 Credits**

In this course, students will implement and evaluate the Population Health project proposed in POPH 305. A final capstone report, oral presentation, and preceptor evaluation will be required. This course includes a weekly honors seminar. To qualify for honors, students must have a 3.5 major GPA and department permission. A total of 4 credits is required to complete the Capstone Execution.

**Repeat Status:** Course may be repeated.

**Prerequisites:** POPH 305

**Can be taken Concurrently:** POPH 305

**POPH 318 Technology, Simulation, and Health 3 Credits**

This course provides an introduction to the technology-based environments (e.g., intelligent tutoring systems, serious games, and immersive technologies) designed for health education, promotion, and intervention. We will explore how the features of technology-based environments improve health outcomes among different populations, and we discuss the theoretical models and educational theories guiding the design of those environments.

**Prerequisites:** POPH 001 or CGH 001

**POPH 319 Population Health Bioethics 3 Credits**

This course will focus on macro-level bioethical dilemmas that arise outside the clinic, at the level of the population, the state, the country, or the globe. Population health policies raise questions about autonomy, individual rights, coercion, justice, community, the meaning of the common good, norms of research, and multi-cultural values. The course will explore a range of questions, including: how to conceptualize, measure and evaluate health inequalities?; how should we set spending priorities?; is paternalism acceptable?

**Prerequisites:** POPH 001 or CGH 001

**POPH 320 (BSTA 320, CGH 320, EPI 320) Independent Study or Research in Population Health 1-4 Credits**

This course can be directed readings or research in Population Health or experiential learning that puts the student's understanding of Population Health into practice. Department permission required.

**Repeat Status:** Course may be repeated.

**POPH 330 Internship in Population Health 1-4 Credits**

In this advanced course, students will engage in supervised work in Population Health. Potential internship sites include government agencies, non-profit organizations, and the private sector. A written report is required and preceptor evaluation will be required. Department permission required.

**Repeat Status:** Course may be repeated.

**POPH 350 Special Topics in Population Health 3-4 Credits**

In this course, students will engage in an intensive exploration of a topic of special interest that is not covered in other courses. Topics addressed will be at an advanced level.

**Repeat Status:** Course may be repeated.

**POPH 360 Population Health Study Abroad 1-3 Credits**

Upper-level population health focused course taken during an abroad experience.

**Repeat Status:** Course may be repeated.

**POPH 401 Population Health Concepts and Methods 3 Credits**

In this introductory graduate course, students will apply foundational concepts related to the definition and measurement of health and disease as well as the multiple determinants of population health (from cell to society). Students will then apply the fundamental principles of quantitative and qualitative research methodologies in order to integrate the multiple determinants of health in population health research and practice. This course will also explore the translation of research findings to programmatic intervention and policy development.

**POPH 403 Biological Basis of Population Health: Concepts and Methods 3 Credits**

In this graduate course, students will investigate the biological mechanisms underlying population health outcomes as well as the roles of individual and group susceptibility to disease. Students will also explore and apply the emerging and traditional tools used in genomic, molecular, immunological, and environmental fields. Students will then integrate the biological and societal determinants of health in order to propose programmatic and policy interventions that promote health and prevent disease.

**POPH 405 Qualitative Research Methods 3 Credits**

This is a graduate-level course designed to teach the basics of rigorous qualitative methodology. It is a practical course through which you will learn about and gain experience in study design and sampling methods; data collection through participation and observation, interviews, and focus groups; different traditions of data analysis; and presenting qualitative methods in academic writing, including for study design or grant writing and academic journal writing.

**POPH 406 Seminar: Cultural Understanding and Health 1 Credit**

Cultural understanding and cultural relativism provide perspectives, abilities, and skills needed to work with diverse peoples and communities in cross-cultural settings. This course will explore cultural understanding and cultural relativism as well as other perspectives, methods, and skills required to understand, participate in, and implement culturally-appropriate and culturally-relevant health-related projects at the individual and community-levels.

**POPH 407 Seminar: Data-informed Policy Making 1 Credit**

This seminar will introduce students to the different ways in which data informs the policy decision-making process. We will begin with an analysis of the different types of data and how they influence policy prioritization processes. This will be followed by a discussion about how governments and non-governmental organizations strategically use data to evaluate policy effectiveness and search for improvements.

**POPH 408 Population Health Survey Methods 3 Credits**

In this graduate course, students will explore and apply the foundational concepts and methods related to questionnaire design, sampling, quantitative and qualitative data collection, and data preparation for analysis. Specifically, this course will expose students to the foundational concepts and skills related to measure development and validation. This course will also introduce students to mixed methods research.

**Prerequisites:** POPH 401 and (EPI 404 or EPI 304) and BSTA 402

**POPH 409 Social Determinants of Population Health 3 Credits**

This course will look at cultural and social institutions, as well as other components of culture, society, and social structure, that affect health and the health outcomes at the individual and community-levels. Topics to be analyzed include cultural traditions, social norms, politics, economics, housing, transportation, and subsistence strategies, just to name a few. Additionally, specific illnesses, sicknesses, and diseases linked to cultural and social institutions and the human experience will also be explored.

**Prerequisites:** POPH 401

**POPH 410 Population Health Thesis I (proposal) 3 Credits**

In this writing-intensive course, students will work closely with their academic advisor to develop a detailed research proposal for a population health thesis project.

**Prerequisites:** POPH 401

**POPH 411 Population Health Thesis II (execution) 3 Credits**

In this course, students will work closely with their academic advisor and other relevant mentors to implement and evaluate the population health thesis project proposed in "Population Health Thesis I". A final thesis paper and oral presentation will be required.

**Prerequisites:** POPH 410

**POPH 412 Research Ethics in Population Health 3 Credits**

Students will explore ethical concepts and critical issues pertaining to the ethical inclusion of human subjects in population health research as well as the responsible conduct of research. This course will provide opportunities for writing about, discussion of, and case-based learning around current and historical perspectives on population health research. Students will complete the necessary training for participating in human subjects research as well as the responsible conduct of research at Lehigh University.

**POPH 413 Foundations of Global Health 3 Credits**

This graduate-level course provides an in-depth examination of the issue of global health. We begin with an analysis of the rise of the international community in addressing population health needs, and the international norms guiding healthcare delivery systems. We will also focus on healthcare delivery systems, technological and scientific innovations, and data science in response to healthcare needs in several developing nations. Finally, students will understand the political, social, and commercial determinants of population health in these countries.

**POPH 414 Global Health Research or Field Experience 3 Credits**

During this field experience, students will engage in supervised work in global health. Placements will be arranged to suit individual interests and career goals. Potential placements include government agencies, non-profit organizations, the private sector, and other academic institutions that are involved with global health work. A written report and preceptor evaluation will be required.

**Repeat Status:** Course may be repeated.

**POPH 416 Grant Writing 3 Credits**

This course will introduce students to grant writing in community health, population health, and public health. Topics include, but are not limited to, researching appropriate funding agencies and funding mechanisms, developing specific aims, project narratives, and budgets, understanding reviewer summary statements, and drafting reports for funding agencies. Differences in funding from federal, state, and private agencies and organizations will also be discussed. Students will draft their own proposals with the intent of submission. This course is intended for doctoral students.

**POPH 417 (CGH 417) Teaching Community and Population Health 3 Credits**

This course is designed for doctoral students in community health and population health to learn about teaching and course development. Students will learn about the pragmatic aspects of curriculum design, including syllabus design, how to select readings, assignment and exam design, grading and rubric design, creating lectures and slides, lecturing, and leading discussions for different levels of learners. Students will also gain practical experience in these areas and will create a new community or population health course.

**POPH 419 Population Health Bioethics 3 Credits**

This course will focus on macro-level bioethical dilemmas that arise outside the clinic, at the level of the population, the state, the country, or the globe. Population health policies raise questions about autonomy, individual rights, coercion, justice, community, the meaning of the common good, norms of research, and multi-cultural values. The course will explore a range of questions, including: how to conceptualize, measure and evaluate health inequalities?; how should we set spending priorities?; is paternalism acceptable?

**POPH 420 (CGH 420, PUBH 420) Independent Study or Research in Population Health 1-4 Credits**

This course can be directed readings or research in Population Health or experiential learning that puts the student's understanding of Population Health into practice. Department permission required.

**Repeat Status:** Course may be repeated.

**POPH 430 Internship in Population Health 1-4 Credits**

In this advanced course, graduate students will engage in supervised work in Population Health. Potential internship sites include government agencies, non-profit organizations, and the private sector. A written report is required and a preceptor evaluation will be required. Department permission required.

**Repeat Status:** Course may be repeated.

**POPH 431 Environmental Health Sciences 3 Credits**

This course introduces key concepts and methods, such as exposure science, epidemiology, toxicology, biomarkers/omics, risk assessment, implementation science, and policy, in order to deepen the understanding of the relationship between major emerging environmental issues and human health. Specifically, the students will apply key tools to explain the relationship between global-, regional, and local-scale environmental contributors to human health outcomes.

**POPH 450 Special Topics in Population Health 3 Credits**

In this course, students will engage in an intensive exploration of a topic of special interest that is not covered in other courses. Topics addressed will be at an advanced level.

**Repeat Status:** Course may be repeated.

**POPH 480 Seminar: Population Health Doctoral Roundtable 1 Credit**

In this seminar, students will present their progress and receive peer mentoring on various stages of the research process (e.g. conference presentations, grant applications, manuscripts, dissertation proposal). This seminar will also provide career counseling resources, such as presentations on grant opportunities, the job search process, career networking, interview process, etc. All students will be required to enroll in this seminar until they advance to candidacy and present their dissertation proposal prior to the formal proposal defense with the doctoral committee.

**Repeat Status:** Course may be repeated.

**POPH 481 Seminar: Supervised Research in Population Health 1 Credit**

In this seminar, students will work closely with their doctoral advisor or another faculty mentor on supervised research projects. Students will be required to enroll in this seminar in their second semester of the doctoral program and continue to take this course every semester until they advance to the qualifying exam stage.

**Repeat Status:** Course may be repeated.

**POPH 482 Population Health Dissertation Proposal 1-8 Credits**

Students will work closely with their doctoral advisor and doctoral committee to develop their dissertation proposal. Students will orally defend their dissertation proposal to their doctoral committee and will need to obtain approval before proceeding to the dissertation phase.

**Repeat Status:** Course may be repeated.

**POPH 499 Population Health Dissertation 1-10 Credits**

Students will work closely with their doctoral advisor and doctoral committee to complete their dissertation project. Students will be required to pass their dissertation defense and incorporate feedback from the committee in order to meet the graduation requirements for the doctoral degree.

**Repeat Status:** Course may be repeated.