

EPIDEMIOLOGY

The Master of Science in Epidemiology is a one-year, full-time master's program through Northwestern University Feinberg School of Medicine at our downtown Chicago campus. The program provides graduate training in epidemiologic research design and analysis for students who want to gain the necessary skills to successfully work in public health and/or clinical epidemiologic research.

Additional resources:

- Department website (<https://www.feinberg.northwestern.edu/sites/ms-epi/>)
- Program handbook

Degree Offered

- Epidemiology MS (<https://catalogs.northwestern.edu/tgs/epidemiology/epidemiology-ms/>)

The Master of Science in Epidemiology is offered through the Program in Public Health at Northwestern University Feinberg School of Medicine and is accredited by the Council on Education for Public Health (CEPH). In order to prepare students to pursue epidemiologic research, the degree requirements for the MS in Epidemiology were developed to teach students the necessary skills for work in clinical epidemiologic research and/or public health. Upon completion of the required coursework, all students earning the degree should be able to:

- Evaluate the strengths and limitations of study designs by selecting appropriate measures of association and identifying potential sources of error in epidemiologic research.
- Implement principles of epidemiology, particularly social epidemiology, to understand the underlying structural causes of health disparities.
- Discuss the role and impact of bias, confounding, and effect modification in data interpretation.
- Conduct epidemiologic analyses, including logistic, Poisson, and linear regression, multilevel modeling, and survival analysis
- Critically review the scientific literature, synthesize findings across studies, and make appropriate recommendations based on current knowledge.
- Apply ethical and regulatory requirements for epidemiologic research.
- Communicate epidemiologic findings clearly and effectively to community members and academic audiences, using culturally appropriate and scientifically rigorous methods.

PUB_HLTH 301-0 Behavior, Society & Health (1 Unit)

The course analyzes the interplay of social structure, technology, culture and demography on patterns of health, illness and health behavior. The course focuses on the application of theories of behavioral change for solving health and public health problems, including stages of change, relapse prevention, social advertising and social marketing methods for use in primary care and community settings.

PUB_HLTH 302-0 Introduction to Biostatistics (1 Unit)

The course focuses on descriptive statistics, principles of exploratory data analysis, basic probability, hypothesis testing, correlation, simple linear regression, and the basics of the analysis of variance. All examples are directed towards application of these methods in the medical and health fields.

PUB_HLTH 303-0 Environmental Health Sciences (1 Unit)

The course offers a broad background introduction to the analysis of the health consequences of exposure to air, weather, food, the workplace and other special environments potentially contaminated by biologic, chemical and physical agents.

PUB_HLTH 304-0 Introduction to Epidemiology (1 Unit)

This course introduces the science of epidemiology and its uses, including measures of disease occurrence, common sources and types of data, important study designs and sources of error in epidemiologic studies.

PUB_HLTH 305-0 Programming for Statistical Analysis (1 Unit)

This is an introductory course to programming for statistical analysis using SAS. Topics include data management, descriptive statistics, tests of association and reports.

PUB_HLTH 306-0 Health Literacy, Communication, & Systems Change (1 Unit)

This course explores health literacy across personal, organizational, and systemic levels, emphasizing the critical roles of clear communication and systems change in advancing public health. Combining insights from disciplines such as sociology, user-centered design, health communications, healthcare quality, patient safety, and health policy, the course provides a comprehensive approach to understanding and improving health literacy. Key topics include plain language, motivational interviewing, teach-back methods, data visualization, risk communication, and user-centered design principles. This course focuses on tailoring messages to diverse audiences, with a strong emphasis on health equity, cultural competence, and cultural humility. Students will develop practical skills, such as rewriting health materials for clarity, critiquing data visualizations, creating process maps to identify intervention opportunities, and delivering professional presentations. Class time includes interactive lectures, in-class exercises, and small-group discussions. The course culminates in a final project where students create a user journey map, identifying opportunities to enhance health literacy and improve system processes. Designed for students pursuing careers in public health, this course equips participants with practical tools to communicate effectively and drive impactful systems change. By the end of the course, students will be equipped to apply health literacy principles to address real-world public health challenges.

Prerequisites: PUB_HLTH 301-0 Behavior Society and Health.

PUB_HLTH 310-1 Public Health Practice for Physicians I (0 Unit)

The Public Health Practice for Physicians course series develops foundational public health knowledge and skills that are essential for students to become effective public health physicians. Class sessions are not lecture-based but seminar style and highly interactive as we engage in mutual exploration of the broad and complex topics that underlie public health work. Guest discussants with both MD and MPH credentials center learning around real-world scenarios allowing the students to think critically about how concepts are applied in practice. Assignments focus on practical skill-building and professional development specific to physicians and physicians-in-training.

PUB_HLTH 310-2 Public Health Practice for Physicians II (0 Unit)

The Public Health Practice for Physicians course series develops foundational public health knowledge and skills that are essential for students to become effective public health physicians. Class sessions are not lecture-based but seminar style and highly interactive as we engage in mutual exploration of the broad and complex topics that underlie public health work. Guest discussants with both MD and MPH credentials center learning around real-world scenarios allowing the students to think critically about how concepts are applied in practice. Assignments focus on practical skill-building and professional development specific to physicians and physicians-in-training.

PUB_HLTH 310-3 Public Health Practice for Physicians III (0-1 Unit)

The Public Health Practice for Physicians course series develops foundational public health knowledge and skills that are essential for students to become effective public health physicians. Class sessions are not lecture-based but seminar style and highly interactive as we engage in mutual exploration of the broad and complex topics that underlie public health work. Guest discussants with both MD and MPH credentials center learning around real-world scenarios allowing the students to think critically about how concepts are applied in practice. Assignments focus on practical skill-building and professional development specific to physicians and physicians-in-training.

PUB_HLTH 313-0 Topics in Public Health (0.5 Unit)

This variable topics course addresses important current issues in public health.

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This variable topics course addresses important current issues in public health.

PUB_HLTH 316-0 Topics in Public Health (1 Unit)

This variable topics course addresses important current issues in public health.

PUB_HLTH 317-0 Seminar in Community Health Research (0 Unit)

The Seminar in Community Health Research is a weekly one-hour seminar that is required for all MPH students in the Community Health Research concentration. The student will earn one unit of credit for each year, awarded in the fall quarter. The seminar will provide students with an overview of methods, approaches and research design considerations that are relevant to design, implementation and evaluation of community health research. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight community health research conducted by Northwestern faculty as well as research conducted at other universities.

PUB_HLTH 318-0 Seminar in Community Health Research II (0 Unit)

The Seminar in Community Health Research is a weekly one-hour seminar that is required for all MPH students in the Community Health Research concentration. The student will earn one unit of credit for each year, awarded in the fall quarter. The seminar will provide students with an overview of methods, approaches and research design considerations that are relevant to design, implementation and evaluation of community health research. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight community health research conducted by Northwestern faculty as well as research conducted at other universities.

PUB_HLTH 319-0 Seminar in Community Health Research III (1 Unit)

The Seminar in Community Health Research is a weekly one-hour seminar that is required for all MPH students in the Community Health Research concentration. The student will earn one unit of credit for each year, awarded in the fall quarter. The seminar will provide students with an overview of methods, approaches and research design considerations that are relevant to design, implementation and evaluation of community health research. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight community health research conducted by Northwestern faculty as well as research conducted at other universities.

PUB_HLTH 320-0 Community Engaged Research (1 Unit)

This introductory course in community health considers the basic elements that determine health and asks difficult questions about why the richest and most powerful country in world history is so unhealthy? Discussion will focus on differences in communities, community health assessments, principles for effective collaboration with communities and introduction to community health research.

PUB_HLTH 323-0 Health Equity (1 Unit)

This course provides an overview of social, economic and political inequities in the United States and their impact on the health of the poor, uninsured, elderly, racial and ethnic minorities, migrants, gendered and sexual groups, rural residents, people with mental and physical disabilities and other vulnerable and socially disadvantaged populations. Past and current policies and trends in health /medical care programs and services at the local and national levels will be discussed. Students will examine social science concepts and theoretical frameworks that will expand their knowledge and skills and empower them to become agents of social change using public health models to impact individuals, families, communities and institutions. Class topics and discussions will center on: social and income inequalities; access (or lack of) to healthcare, including preventive services and other social resources; roles of government and the legislative process; quality care; legal and ethical issues; among others. Throughout the course, discussions will center on the social determinants of health - neighborhood environments and strategies toward short and long term solutions in the elimination of health disparities and achieving health equity. Discussion about the Patient Protection and Affordable Care Act and recent Supreme Court rulings will also be integrated into many of the discussions.

PUB_HLTH 330-0 Global Tobacco: Control and Prevention (1 Unit)

The purpose of the course is to provide students with information on the health problems associated with tobacco use across the lifespan; the consequences of second- and third-hand smoke; new and promising clinical, public health and legal strategies for both prevention and cessation; and international perspectives on tobacco control. Special emphasis will be directed at tobacco use and prevention among vulnerable populations, including youth, minorities and the poor.

PUB_HLTH 341-PP Public Health Principles and Practice (1 Unit)

NPEP course.

PUB_HLTH 341-DL Public Health Principles and Practice (1 Unit)

A survey course detailing how human health is impacted by social, economic, cultural, behavioral, and environmental factors and the core values, concepts, and functions of public health in society.

PUB_HLTH 342-DL Epidemiology and Biostatistics (1 Unit)

This course provides an introduction to epidemiology and biostatistics for application in health sciences. Concepts of descriptive statistics, probability, hypothesis testing, correlation, linear regression and analysis of variance will be covered. A focus on how these principles and statistical procedures are used in public health initiatives, including measuring disease prevalence and incidence and for prevention and intervention assessment will be included.

PUB_HLTH 343-DL Healthcare Disparities, Inequities, and Social Determinants of Health (1 Unit)

This course examines the impact of social categorizations of difference, including race, class, gender, sexuality, age and religion, on access to healthcare and individual health outcomes. Students will critically explore current debates of social inequity in healthcare policy and research.

PUB_HLTH 344-DL Health Program Development and Evaluation (1 Unit)

This course provides the theoretical and practical foundation for developing and evaluating health programs. An emphasis on the use

of organizational and population data, the role of stakeholders, and the development of program objectives and assessment strategies to evaluate program outcomes and effectiveness.

PUB_HLTH 350-0 Dual Degree Seminar: Topics in Public Health for the Physical Therapist (0.05-0.15 Unit)

The Topics in Public Health for the Physical Therapist seminar course sequence prepares the physical therapist/public health professional by explicitly linking and integrating physical therapy practice and public health practice. The course emphasis is to foster awareness of opportunities for the physical therapist/public health professional through discussion and analysis of public health practice and physical therapy practice. This course provides students the opportunity to interact with faculty on topics that integrate physical therapy and public health practice and policy. Goals of this course are to discuss the intersection of population health and clinical practice and the application of core skills needed for success in a physical therapist-public health career. Prerequisite: Only students in the DPT-MPH degree program are eligible to take this course.

PUB_HLTH 351-0 Introduction to Implementation Science (1 Unit)

In the United States, it takes an average of 17 years for research to change clinical practice. This delay is known as the “know-do gap” in healthcare. The goal of implementation science is to close the know-do gap and equitably advance public health. This course provides an introduction to implementation science, an interdisciplinary field focused on promoting the integration of evidence-based practices in real-world health settings. Students will gain a foundational understanding of key theories, methods, and tools to address barriers to the uptake of health interventions. Through didactic lectures, group discussions, and case study analysis, students will acquire practical knowledge on how to design and execute an implementation project aimed at closing the know-do gap.

PUB_HLTH 360-1 Seminar in Data Science (1 Unit)

This course serves as a requirement for the MPH concentration in Public Health Data Science. Proficiency in various skills is essential in the field of public health, including extracting, cleaning, analyzing, interpreting, and sharing information from various data sources. Students will utilize R/RStudio to complete assignments that involve statistical programming. Throughout this course, we will delve into relevant topics at the intersection of data science and public health. We will explore various methodologies and tools used to collect, analyze, interpret, and visualize public health data, placing strong emphasis on their practical application in real-world scenarios and common pitfalls encountered when working with such data. By the course's conclusion, students will expand upon fundamentals in data science in order to evaluate complex public health challenges, critique policies, and formulate solutions to improve population health outcomes.

PUB_HLTH 370-1 Seminar in Maternal Child Health (0 Unit)

This course is designed to be a seminar series highlighting key aspects of maternal and child health including obstetric health policy, obstetric health services, reproductive autonomy, complicated pregnancies, postpartum care and policy, and obstetric technologies. Students will have the opportunity to engage in discussions with leaders in maternal child health as they share their insights and expertise through a series of guest lectures.

PUB_HLTH 370-2 Seminar in Maternal Child Health (0 Unit)

This course is designed to be a seminar series highlighting key aspects of maternal and child health including obstetric health policy, obstetric health services, reproductive autonomy, complicated pregnancies, postpartum care and policy, and obstetric technologies. Students will have the opportunity to engage in discussions with leaders in maternal

child health as they share their insights and expertise through a series of guest lectures.

Prerequisites: PUB_HLTH 370-1 Seminar in Maternal Child Health (Fall quarter).

PUB_HLTH 370-3 Seminar in Maternal Child Hlth (1 Unit)

This course is designed to be a seminar series highlighting key aspects of maternal and child health including obstetric health policy, obstetric health services, reproductive autonomy, complicated pregnancies, postpartum care and policy, and obstetric technologies. Students will have the opportunity to engage in discussions with leaders in maternal child health as they share their insights and expertise through a series of guest lectures.

Prerequisite: PUB_HLTH 370-1 Seminar in Maternal Child Health (Fall quarter) and PUB_HLTH 370-2 Seminar in Maternal Child Health (Winter Quarter).

PUB_HLTH 387-0 Seminar in Global Health I (0 Unit)

The Seminar in Global Health is a weekly one-hour three-quarter (Fall, Winter, Spring) seminar that is required for all MPH students in the Global Health concentration. The seminar will provide students with an overview of the concentration, the interdisciplinary breadth of coursework, and the field and culminating experiences. The seminar will provide opportunities for critical analysis and dialogue on major global health issues. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program and Global Health Concentration. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight global health research and practice. All three courses (PUB_HLTH 387-0, PUB_HLTH 388-0, PUB_HLTH 389-0) must be successfully completed in order to earn 1 credit at the end of spring quarter.

PUB_HLTH 388-0 Seminar in Global Health II (0 Unit)

The Seminar in Global Health is a weekly one-hour three-quarter (Fall, Winter, Spring) seminar that is required for all MPH students in the Global Health concentration. The seminar will provide students with an overview of the concentration, the interdisciplinary breadth of coursework, and the field and culminating experiences. The seminar will provide opportunities for critical analysis and dialogue on major global health issues. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program and Global Health Concentration. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight global health research and practice. All three courses (PUB_HLTH 387-0, PUB_HLTH 388-0, PUB_HLTH 389-0) must be successfully completed in order to earn 1 credit at the end of Spring quarter.

PUB_HLTH 389-0 Seminar in Global Health III (1 Unit)

The Seminar in Global Health is a weekly one-hour three-quarter (Fall, Winter, Spring) seminar that is required for all MPH students in the Global Health concentration. The seminar will provide students with an overview of the concentration, the interdisciplinary breadth of coursework, and the field and culminating experiences. The seminar will provide opportunities for critical analysis and dialogue on major global health issues. Many of the topics covered in this course will be discussed in greater detail in other core and elective courses within the MPH program and Global Health Concentration. An emphasis will be placed on providing case examples to help illustrate key points. These case examples will highlight global health research and practice. All three courses (PUB_HLTH 387-0, PUB_HLTH 388-0, PUB_HLTH 389-0) must be successfully completed in order to earn 1 credit at the end of Spring quarter.

PUB_HLTH 390-0 Introduction to International Public Health (1 Unit)

Introduction to International Public Health will orient students to the biological, socio-cultural and economic influences on population-level

variation in health and well-being. The continuum between health and illness will be explored, focusing on both the proximate and distal determinants of variation in health and well-being. Students will learn about key players in international health - the multilateral and bilateral donor communities, Ministries of Health, UN agencies, foundations, NGOs - and understand important shifts in donor policies towards healthcare delivery. They will be introduced to the major health problems currently affecting the developing world and alerted to the importance of employing a population-based vs. a purely clinical approach to solving these health problems.

PUB_HLTH 391-0 Global Health Care Service Delivery (1 Unit)

The course will engage students in an analysis of case studies that describe interventions to improve healthcare delivery in resource-limited settings. The cases capture various programmatic, organizational and policy-related innovations related to care delivery. Classroom discussions of these case studies will help illuminate principles and frameworks for the design of effective global health interventions. Through a focus on HIV, TB, malaria and other health conditions, these cases will allow students to carefully consider the question of how epidemiology, pathophysiology, culture, economy and politics inform the design and performance of global health programs.

PUB_HLTH 393-0 Introduction to Health and Human Rights (1 Unit)

This course, which is open to Public Health, Law and Kellogg students, examines the intersection of health and human rights at the global and national levels, in theory and in practice. Readings and discussion will focus on the following topics: the complex relationship between health and human rights; the right to health; global activism and litigation to promote health and human rights; the movement for access to medicines; sexual and reproductive health rights; and health systems in the United States. Students will work in interdisciplinary teams on a health assessment and intervention known as the Northwestern Access to Health Project. Headed by Professor Brian Citro, with assistance from Health and Human Rights Fellow Elise R. Meyer, the Access to Health Project seeks to leverage academic and community partnerships to maximize access to health in communities in the developing world and the United States.

PUB_HLTH 411-0 Assessment, Planning & Evaluation in Community Health (1 Unit)

Assessment, Planning and Evaluation are three core features of community health research. The objective of this course is to provide an overview of the fundamental and basic skills needed for conducting research with community partners related to health assessments, program planning and evaluation of public health programs. We will focus on efforts needed in working with community partners and research methodologies recommended for effectively and efficiently conducting research without interrupting the flow of community organizations. You will have an opportunity to talk with representatives from community organizations and to apply your learning to an actual community setting.

PUB_HLTH 412-0 Infection Disease Epidemiology and Prevention (1 Unit)

This course focuses on the public health tools for the surveillance, identification, control and prevention of selected infectious diseases of public health importance. Special emphasis will be focused on outbreak investigations because they provide a unique opportunity to apply many principles of public health practice, including use and interpretation of surveillance data, risk factor analysis and implementation and assessment of control measures.

PUB_HLTH 414-0 Injury and Violence Prevention (1 Unit)

This course examines injury as a public health problem and explores research methods, study design, risk factors and prevention strategies

applied to problem of injuries. This general framework will be applied to the study of specific injury mechanisms.

PUB_HLTH 415-1 Contemporary Issues in Disease Prevention (1 Unit)

This course explores the value of and barriers to disease prevention and health promotion (DP/HP), factors that influence personal health decisions, preventive interventions directed at individuals (clinical settings) and populations (community settings), strategies for using population health principles to integrate DP/HP into routine medical and Public Health practice and the organization of federal agencies that fund DP/HP activities.

PUB_HLTH 416-0 Program Evaluation (1 Unit)

This course will provide students with a comprehensive theoretical, methodological and ethical foundation for conducting public health program evaluation. Students will experience the practice aspects of evaluation including communicating and negotiating with stakeholders, conducting an evaluability assessment, developing logic models and evaluation questions, identifying appropriate data collection methods, gathering reliable and valid evaluation data that are appropriate to the selected design and analysis methods, analyzing data, reporting evaluation results, and ensuring evaluation use. The instructor will facilitate a learning and skill-building environment, drawing on personal experiences and the expertise of others in the field.

PUB_HLTH 417-0 Public Health Law: Promoting Healthy Youth Development (1 Unit)

This course examines the application of law to critical Public Health issues affecting children and youth including the constitutional and statutory foundation of Public Health law, how legislative and regulatory decisions must negotiate the balance between individual rights and public good and the principles of *parens patriae* and state police powers. Case studies will illustrate the basis of Public Health jurisprudence at the national level.

PUB_HLTH 418-0 Applied Practice Experience I (0 Unit)

The Applied Practice Experience (APEX) is a two course sequence, PUB_HLTH 418-0 and PUB_HLTH 419-0. Students complete this course while working at a public health service organization or faculty-supervised public health project. Students examine real-world aspects of public health practice through scholarly literature, community-based experiential learning, peer coaching, and skill-building modules.

PUB_HLTH 419-0 Applied Practice Experience II (0-0.5 Unit)

In the APEX II, students gain real-world public health practice experience by working with public health leaders to develop public health products that serve diverse communities in domestic or international settings. All MPH students are required to complete the practice experience. The Applied Practice Experience (APEX) is a two course sequence, PUB_HLTH 418-0 and PUB_HLTH 419-0. Students complete this course while working at a public health service organization or faculty-supervised public health project. Students examine real-world aspects of public health practice through scholarly literature, community-based experiential learning, peer coaching, and skill-building modules.

PUB_HLTH 420-0 Introduction to US Health Care System (1 Unit)

Course Aims: Be able to state and explain the structure, key facts and important issues pertaining to the U.S. health system. Be able to research topics for further study by becoming familiar with the relevant literature and be able to analyze problems in this sector by understanding applicable frameworks.

PUB_HLTH 421-0 Intermediate Biostatistics (1 Unit)

Intermediate Biostatistics builds upon the material learned in Introduction to Biostatistics. Specifically, the course will focus on single-outcome, multiple-predictor methods: multiple linear regression for

continuous outcomes, logistic regression for binary outcomes, and the Cox proportional hazards model for time-to-event outcomes. Degree-seeking students must take either this course or PUB_HLTH 422-0.

PUB_HLTH 422-0 Intermediate Epidemiology (1 Unit)

This course covers epidemiologic methods used in observational epidemiologic studies including the design, conduct and interpretation of observational studies in human populations with a focus on analytic cross-sectional, case-control studies and cohort studies. Key issues related to statistical approaches, validity of measures of exposure and disease and sources of potential errors in interpreting epidemiologic studies will be addressed.

Prerequisites: PUB_HLTH 304-0, PUB_HLTH 302-0. Recommended: PUB_HLTH 421-0.

PUB_HLTH 425-0 Introduction to GIS and Spatial Analysis for Public Health (1 Unit)

This course is an introduction to GIS and the collection, maintenance and analysis of spatial data for health. It combines practical ArcGIS skills with study of the theory and applications of spatial data and spatial analysis in general and specifically as it relates to population health.

PUB_HLTH 430-0 Global Health Research Practicum (1 Unit)

Students will learn to design an evidence-based and culturally appropriate global health research project or program. Specifically, students will gain competence in analyzing needs and resources; developing a technically and programmatically sound causal pathway; articulating program objectives; designing relevant program components and partnerships, implementing a program, planning program monitoring and evaluation, and ensuring program sustainability.

PUB_HLTH 431-0 Basic Decision Analysis and Models of Medical Decision Making (1 Unit)

This course covers quantitative analytic techniques intended to inform decision makers at the bedside, researchers, and those involved with policy-making. Topics include probability, Bayes' theorem, sensitivity and specificity of diagnostic tests, and decision psychology, with a focus on decision analysis, utility assessment, and cost-effectiveness analysis.

PUB_HLTH 435-0 Health Services Research Design & Analysis Strategies: Technology Assessment (1 Unit)

This course is an independent study research seminar based on individual student meetings with the instructor and other faculty mentors. The course focuses on completion of a health services research or health policy paper and oral presentation, often in conjunction with MPH program Culminating Experience requirements. Papers require health services research methodological and study design skills or the conceptual and analytical skills needed for public health history or health policy analyses. Learning objectives include applying health services research methods to a public health, clinical policy or public policy problem or debate, describing factors underlying geographic or provider variations in medical practice or health outcomes, using quality measurement, quality improvement, patient safety or epidemiologic research techniques, conducting risk adjustment for evaluation of medical or behavioral health interventions, and addressing critical issues in social determinants of health or social epidemiology. Enrollment requires prior consent of the instructor.

PUB_HLTH 438-0 Survey Design & Methodology (1 Unit)

This course focuses on methodological issues regarding the design, implementation, analysis and interpretation of surveys and questionnaires in Public Health research. Various types of self-report data will be discussed, including knowledge, attitudes, behaviors and patient-reported outcomes. Issues will include formatting and layout, wording of items and response scales, multilingual translations, sampling, timing of

assessments, interviewer training, participant recruitment, data analysis and respondent and staff burden.

PUB_HLTH 439-0 Qualitative Research Methods (1 Unit)

This course focuses on qualitative research design, sampling, data management, analysis and report writing. Methods covered include cognitive interviewing for survey construction, individual and group interview methodologies, participant observation, writing and using field notes, cognitive tasks such as decision modeling, domain analysis and the use of mapping techniques in qualitative research. Data analysis instruction includes thematic analyses and code development, consensus and network analyses and an overview of qualitative data management programs.

PUB_HLTH 441-0 Ethical Issues in Clinical Research (0.5 Unit)

This case-based course provides student with knowledge of the issues surrounding the ethical conduct of research including making ethical choices in the face of conflicts, and gaining a familiarity with the regulations governing human subjects research.

PUB_HLTH 445-0 Writing and Peer Reviewing for Scientific Publication (1 Unit)

Writing and Peer Reviewing is an intensive, hands-on, advanced course in writing for publication in biomedical journals and how to be a successful peer reviewer. The student will be expected to prepare an article, respond to two peer review cycles and at the conclusion of the course, to be ready to submit to a journal.

PUB_HLTH 446-0 LGBTQ Health (1 Unit)

This course synthesizes work in sexual and gender minority (SGM) population health research. The course will critically examine how power, social context, and social position simultaneously shape the lives and health of SGM people, explore theories that describe the mechanisms and pathways that shape SGM population health outcomes, and discuss the ethical responsibilities of public health professionals to engage SGM individuals and community stakeholders.

PUB_HLTH 447-0 Structural Racism in Public Health (1 Unit)

This seminar examines research in which race and structural racism are considered a social determinant of health. It will explore social constructions of health and examine key theoretical frameworks and empirical data from public health. We will evaluate the ways the health system puts the wellbeing of vulnerable populations at risk and identify prevention and intervention approaches for change.

PUB_HLTH 448-0 Introduction to Maternal Child Health (1 Unit)

This course provides an introduction to the health needs of women and children and the services designed to meet these needs. It introduces the epidemiology of maternal and child health (MCH) and the evidence base for MCH programs. The course provides students with a comprehensive knowledge base with respect to federal funding and other public programs addressing MCH.

PUB_HLTH 449-0 Public Health Policy (1 Unit)

This course addresses how public policy development and analysis have an impact on the public's health. The course is designed to provide professionals with the skills for collecting, analyzing and communicating information on public health policy issues using approaches that would be useful in the policymaking arena. Students will learn what policy is; who the policymakers are in public health; who the actors are that are affected by Public Health policy; and the major influences in determining what policy gets implemented, including the science underlying policy proposals.

PUB_HLTH 451-0 Advanced Topics in Implementation Science (1 Unit)

This course builds upon the foundations provided in the introduction to implementation science course to explore more in-depth core

topics in the field of implementation science. The first half of the course explores methods for selecting, designing and tailoring, and evaluating implementation strategies. The second half of the course examines critical topics in the field of implementation science. Students will engage in independent and group activities to apply conceptual and methodological knowledge to “real world” public health scenarios. This course will prepare students to develop key elements of an implementation science project proposal, including contextual assessment, implementation strategy selection and tailoring, and evaluation of implementation outcomes.

Prerequisites: PUB_HLTH 351 Introduction to Implementation Science.

PUB_HLTH 460-1 Data Visualization for Public Health (1 Unit)

This course will build upon the analytical tools learned during the previous courses to enable students to visually convey their findings to both technical and non-technical audiences. In this course, students will learn how to identify and explain the layers of the grammar of graphics, select effective static data visualizations, write R code to manipulate data visualizations, and construct their own compelling visualizations from scratch using health data. Course goals will be achieved using the ggplot2 package in R. By the end of the course, students should be effective visual communicators of their findings and will be proficient in producing impactful visualizations using ggplot.

Prerequisite: Biostat 306 or previous R experience with approval from instructor.

PUB_HLTH 470-0 Perinatal Mental Health: The Public Health Implications on Maternal & Child Hlth (1 Unit)

The perinatal period is the period inclusive of pregnancy and the first year postpartum. This period is one of the most important periods for child development, yet many families and parents face significant challenges during this period. Perinatal mental health disorders are the most common complication of pregnancy and postpartum period. Perinatal mental health includes depression, anxiety, postpartum psychosis, and other mental illnesses, with depression and anxiety among the most common health challenges for women during the perinatal period. More specifically, perinatal depression and anxiety poses significant mental health risks for mothers, parents, families, and their infants. Currently, the U.S is facing a maternal health crisis due to racial and ethnic disparities and inequities. Disparities and inequities at the parent level have a generational impact. This course will examine multi-level approaches to understanding and addressing the complex factors that affect the health and well-being of women, children, and families during the perinatal period. Students will be introduced to perinatal mental health, the generational impact, and addressing complex problems through elements of implementation science, equity, and public health leadership. This course uses the systems-thinking, reflective practices, and public health leadership teaching methods, which emphasizes active learning, in-class discussion, and out-of-class preparation, reflection, and analysis. This course is highly interactive, requiring active participation by all students, including in small groups.

PUB_HLTH 471-0 Advancing Population Health through Medicaid (1 Unit)

The Medicaid program, a partnership between the federal government and states, provides coverage to 80 million people in the United States, including children, pregnant people, disabled individuals, working-age adults, and senior citizens. Medicaid finances key population health services, including family planning, mental health, immunizations, preventive care, care coordination, and services that allow people with disabilities to be integrated into their communities. Medicaid is increasingly addressing structural determinants of health through evolving payment models. This course is designed to give students a

deep understanding of the Medicaid program to enhance public health practice, clinical care delivery, health services research, and advocacy.

PUB_HLTH 490-0 Advanced Global Public Health (1 Unit)

Advanced Global Public Health will provide an in depth exploration of the current approaches to eradicating long-term social and economic inequalities in health outcomes around the world. We will begin with a review of the current state of global health, highlighting the areas of major gains since 2000, discourse on global health governance, and current trends and emerging health challenges (e.g., chronic metabolic diseases, emerging/re-emerging infectious diseases, humanitarian emergencies). We will then directly examine the diverse strategies that have been used to improve health outcomes in low- and middle-income countries. These strategies range from biomedical interventions (e.g., vaccine campaigns, nutritional supplementation) to broader, macro-level approaches such as targeted cash transfers and agricultural reform. Drawing on detailed case studies, we will explore (a) the nature and structure of global health interventions, (b) the creation of successful partnerships for sustaining health outcomes, and (c) the importance of data collection and analysis for monitoring the effectiveness of program interventions.

Prerequisite: PUB_HLTH 390-0 or GBL_HLTH 301-0.

PUB_HLTH 499-0 Independent Study (0.5-1 Unit)

PUB_HLTH 520-0 Artificial Epidemics and Changes in Human Culture (0.5 Unit)

This course provides a close examination of how human behavior affects the development and spread of so-called “artificial epidemics,” primarily covering non-communicable diseases affecting adults. Diseases and conditions will be examined in order to discern the epidemiology of the disease and how cultural influences can impact both the rise of diseases as public health issues and their subsequent decline in incidence with a view toward prevention of future outbreaks. The course is designed as a “flipped classroom”; students will review materials in advance of the class session and come prepared to share and discuss the week’s topic in class. Thus there is an exceptional long reading list each week and only 1 hour of classroom, rather than 90 minutes, per week in this ½ unit class.

PUB_HLTH 521-0 Artificial Epidemics and Changes in Human Culture II (0.5 Unit)

This course provides a close examination of how human behavior affects the development and spread of so-called “artificial epidemics,” primarily covering non-communicable diseases affecting women and children. Diseases and conditions will be examined in order to discern the epidemiology of the disease and how cultural influences can impact both the rise of diseases as public health issues and their subsequent decline in incidence with a view toward prevention of future outbreaks.

The course is designed as a “flipped classroom”; students will review materials in advance of the class session and come prepared to share and discuss the week’s topic in class. Thus there is an exceptional long reading list each week and only 1 hour of classroom, rather than 90 minutes, per week in this ½ unit class.

PUB_HLTH 524-0 Cardiovascular Disease Epidemiology (1 Unit)

The course will cover selected topics in cardiovascular disease with critical analysis of the current epidemiologic literature. Students will have the opportunity to study methodological issues, contemporary findings and recommendations for future research.

PUB_HLTH 525-0 Cancer Epidemiology (1 Unit)

This course introduces concepts of cancer biology and molecular mechanisms of carcinogenesis, elaborates concepts in epidemiology to studies of cancer epidemiology, uses project-based learning to build skills needed to assess patterns of tissue-specific cancer epidemiology

including risk factors and trends, and covers methods of assessing the validity of current literature and media coverage of cancer epidemiology.

PUB_HLTH 560-0 Culminating Experience (0.5-1 Unit)

Development and presentation of a culminating research or service project based on one month (or at least 200 contact hours) of fieldwork in a community agency or work on a research project of the student's choosing (with guidance from a faculty member) in consultation with an adviser or advisory committee. Student presents a seminar and submits a paper on the project.