POPULATION HEALTH SCIENCES (POP HLTH)

POP HLTH 155 — INTRODUCTION TO THE BIOLOGY OF AGING
2 credits.

Requisites: One sem of gen biology at college level
Repeatable for Credit: No
Last Taught: Fall 2008

POP HLTH 370 — INTRODUCTION TO PUBLIC HEALTH: LOCAL TO GLOBAL PERSPECTIVES
3 credits.

Introduces students to the principles of public health. Using local and global health problems as examples, students are introduced to epidemiology and evidence-based public health, with a focus on closing the gap between science and practice.
Requisites: NUTR SCI 375 or a college-level, introductory science or biology crse.
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 375 — INTRODUCTION TO PUBLIC HEALTH
1 credit.

Introduces concepts and methods of epidemiology, health services research, health policy and financing, disease prevention, and public health. Intended as an overview for undergraduates of all disciplines and who might consider advanced degrees in population health sciences or public health.
Requisites: Jr st or cons inst
Repeatable for Credit: No
Last Taught: Spring 2010

POP HLTH/C&E SOC/SOC 380 — CONTEMPORARY POPULATION PROBLEMS FOR HONORS
3 credits.

This course is designed to identify, examine the nature and evaluate the evidence regarding key population problems affecting modern societies in the developed and developing world. The course emphasizes the development of demographic models as a tool to frame, define and investigate these problems. Examples of problems studied include: relations between population growth and environment, population growth and socioeconomic development, population and emergence of new diseases.
Requisites: Honors, and Soc/Community Environmental SOC/C&E SOC 360 or equivalent or consent of instructor
Course Designation: Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2012

POP HLTH/B MI 451 — INTRODUCTION TO SAS PROGRAMMING FOR POPULATION HEALTH
2 credits.

Use of the SAS programming language for the management and analysis of biomedical data.
Requisites: Pop Hlth grad student or consent of instructor
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/ENVIR ST 471 — INTRODUCTION TO ENVIRONMENTAL HEALTH
3 credits.

Impact of environmental problems on human health; biological hazards to human health from air and water pollution; radiation; pesticides; noise; problems related to food, occupation and environment of the work place; accidents. Physical and chemical factors involved.
Requisites: A course in biology; Jr st
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/ENVIR ST 502 — AIR POLLUTION AND HUMAN HEALTH
3 credits.

Toxicologic, controlled and epidemiologic studies on major air pollutants. Overview of study methods, lung physiology and pathology; air pollution sources, types, meteorology, sampling methods, controls and regulations.
Requisites: Jr st, a course in biology
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 503 — PUBLIC HEALTH AND HUMAN RIGHTS: THE CARE OF VULNERABLE CHILDREN IN AFRICA
1 credit.

Students will understand, critique and constructively engage with global efforts to meet the needs of orphans and other children who are in highly vulnerable situations in Africa. Exploring the tensions and synergies between public health and human rights approaches, this course will prepare students for research, practice or advocacy. It is open to upper level undergraduates (junior and senior standing), graduate students, MPH students, and special students. Approved elective for the Certificate in Global Health.
Requisites: None
Repeatable for Credit: No
Last Taught: Fall 2017
POP HLTH 504 — HEALTH CARE QUALITY IMPROVEMENT IN LOW RESOURCE SETTINGS
1 credit.

This course will present concepts of quality improvement and will trace the introduction and evolution of QI efforts in low-income countries, and among vulnerable populations worldwide. Students will get hands on training in QI methods and tools, and will explore how QI can strengthen health systems. Further, they will develop an understanding of how QI efforts can be linked to larger policy initiatives such as improved governance, task shifting within health care services, rights-based approaches to health care, and realization of the MDGs. This course will provide a useful introduction to the field of quality improvement and could be used to develop preliminary plans for quality improvement studies in a practice setting. It is open to graduate students, MPH students, and upper level undergraduate students (juniors and seniors). It is also open to special students who are enrolled in the Capstone Certificate in Global Health.

Requisites: None
Repeatable for Credit: No
Last Taught: Summer 2017

POP HLTH/NURSING 525 — NURSING LEADERSHIP FOR GLOBAL HEALTH
2-3 credits.

This course is designed to prepare undergraduate and graduate nursing students for leadership in global health (GH) by examining their GH goals in a course framework that integrates knowledge from nursing with contemporary GH knowledge. Directed toward improving health of the global population as a whole, the framework addresses health trends, practice frameworks, the ecological model, ethics, nursing leadership roles, concepts of partnership and evidence-based practice. Students’ learning activity will be tailored to their program level (undergraduate/graduate), their interests and the number of credits they register for.

Requisites: Junior standing and declared in a Nursing program
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH/ECON/PUB AFFR 548 — THE ECONOMICS OF HEALTH CARE
3-4 credits.

Analysis of the health care industry. Markets for hospitals and physicians’ care, markets for health manpower, and the role of health insurance.

Requisites: ECON 301, ECON 311, or PUB AFFR 880
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/B M I 551 — INTRODUCTION TO BIOSTATISTICS FOR POPULATION HEALTH
3 credits.

Course designed for population health researcher. Topics include descriptive statistics, elementary probability, probability distributions, one- and two-sample normal inference (point estimation, hypothesis testing, confidence intervals), power and sample size calculations, one- and two-sample binomial inference, underlying assumptions and diagnostic work.

Requisites: Declared in the Population Health or Epidemiology graduate program; not open to students who have taken BMI/STAT/B M I 511 or BMI/STAT/B M I 541
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/B M I 552 — REGRESSION METHODS FOR POPULATION HEALTH
3 credits.

Introduction to the primary statistical tools used in epidemiology and health services research; multiple linear regression, logistic regression and survival analysis.

Requisites: Pop Hlth/BMI 451 and Pop Hlth/BMI 551 ; or cons inst
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/HIST SCI/MED HIST 553 — INTERNATIONAL HEALTH AND GLOBAL SOCIETY
3 credits.

Major problems in international health from 1750 to the present. Focus on disease epidemiology and ecology; political economy of health; migration; quarantine; race, ethnicity, and health care; international health research; cross-cultural healing; mental and maternal health; growth of international health organizations.

Requisites: Jr or Sr st, or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/ENVIR ST 560 — HEALTH IMPACT ASSESSMENT OF GLOBAL ENVIRONMENTAL CHANGE
3 credits.

Covers contemporary methods of impact assessment in a framework to address global environmental health threats (e.g., global climate change, deforestation and biodiversity loss, and urban sprawl). Issues dovetail well (but do not overlap) with Introduction to Environmental Health.

Requisites: Junior standing
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/M M & I 603 — CLINICAL AND PUBLIC HEALTH MICROBIOLOGY
5 credits.

Lecture-seminar sessions. Lectures (44) describe microorganisms of clinical and public health significance. Seminar sessions (14) discuss issues and controversies of specimen receiving and processing, bacteremia, serodiagnosis of infectious agents, antimicrobial susceptibility testing, laboratory management, and novel approaches to detect infectious agents.

Requisites: A course in microbiology
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/NUTR SCI 621 — INTRODUCTION TO NUTRITIONAL EPIDEMIOLOGY
1 credit.

Techniques used to evaluate relationships of diet to health and disease in human populations; integration of knowledge gained with results of animal and clinical studies toward understanding dietary risk or protective factors for disease. Includes advanced diet assessment and basic epidemiologic approaches.

Requisites: STAT 301 or equiv NUTR SCI 332 or cons inst
Repeatable for Credit: No
Last Taught: Spring 2016
POP HLTH/M&ENVTOX/MEDICINE/ONCOLOGY/PATH/PHM SCI/PHMCOL-M 625 — TOXICOLOGY I
3 credits.

Basic principles of toxicology and biochemical mechanisms of toxicity in mammalian species and man. Correlation between morphological and functional changes caused by toxicants in different organs of the body. 
Requisites: BIOCHEM 501, PHYSIOL 335, PATH 404 and PHM SCI 401
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/M&ENVTOX/MEDICINE/PATH/PHM SCI/PHMCOL-M 626 — TOXICOLOGY II
3 credits.

Survey of the basic methods and fundamental biochemical mechanisms of toxicity. Toxicity in mammalian organ systems, techniques for evaluating toxicity, as well as mechanisms of species specificity, and environmental interactions (with toxicant examples) are presented.
Requisites: MENVTOX/MEDICINE/ONCOLOGY/PATH/PHM SCI/POP HLTH/M&ENVTOX/MEDICINE/ONCOLOGY/PATH/PHM SCI/PHMCOL-M 625
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 640 — FOUNDATIONS IN GLOBAL HEALTH PRACTICE
1 credit.

A one-credit interdisciplinary course designed to prepare graduate students in the health sciences and related fields, as well as health professionals who are special students, for specific global health field experiences.
Requisites: Grad or health professional stdts; Jr or Sr st, or cons inst
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 644 — INTERDISCIPLINARY PERSPECTIVES ON GLOBAL HEALTH AND DISEASE
1 credit.

Addresses a variety of global health topics through study of a specific country. Students will consider health data, health systems, historical and cultural information, and concepts of cultural competence and cultural humility. Prepares students for POP HLTH 645, Global Health Field Study.
Requisites: Grad standing or health professional student; or consent of instructor
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

POP HLTH 645 — GLOBAL HEALTH FIELD COURSE
1-6 credits.

A faculty-led field experience that exposes students to global health work through discussion, observational activities and participation in applied public health activities. Students will gain knowledge about health and disease, learn and practice cross-cultural skills, and explore interdisciplinary approaches to health.
Requisites: Varies by section
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2014

POP HLTH 650 — SPECIAL TOPICS
1-6 credits.

Variable content course. Refer to Timetable or contact department for specific list of course sections, titles, prerequisites, and instructors.
Requisites: Varies by topic
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

POP HLTH/B M I 651 — ADVANCED REGRESSION METHODS FOR POPULATION HEALTH
3 credits.

Extension of regression analysis to observational data with unequal variance, unequal sampling and propensity weights, clusters and longitudinal measurements, using different variance structures, mixed linear models, generalized linear models and GEE. Matrix notation will be introduced and underlying mathematical and statistical principles will be explained. Examples use data sets from ongoing population health research.
Requisites: POP HLTH 798 and POP HLTH/B M I 552, or cons inst
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH/B M I 652 — TOPICS IN BIOSTATISTICS FOR EPIDEMIOLOGY
1-3 credits.

Each module will adopt an in-depth focus on a biostatistical method of particular relevance to epidemiology such as measurement error, missing data, intermediate variables, complex study designs, meta-analysis, splines, propensity scores, causal inference, spatial statistics and resampling. One or more modules will be offered every spring semester.
Requisites: B M I/POP HLTH/B M I 551, B M I/POP HLTH/B M I 552, and (STAT 850 or B M I/POP HLTH/B M I 651)
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2015

POP HLTH 660 — COMMUNICATING PUBLIC HEALTH INFORMATION EFFECTIVELY
1 credit.

Designed to improve public health professionals’ abilities to communicate with different audiences such as news media, legislators, and the public. Students learn strategies for health communication based on scientific recommendation and apply these skills by planning and executing communication activities used in the field.
Requisites: Grad st or health professional student; or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 661 — STATE LEVEL HEALTH SYSTEM, PAYMENT, AND COVERAGE REFORM
1 credit.

Provide and overview of the state health policy initiatives in health care coverage, access, costs, trends in public and private sectors, and current issues and debates about health care reform nationally and in Wisconsin.
Requisites: MPH student or Grad student
Repeatable for Credit: No
Last Taught: Summer 2015
POP HLTH 662 — INTRODUCTION TO SOCIAL MARKETING IN PUBLIC HEALTH
1 credit.

The course teaches students about social marketing and applications that apply to public health. It combines didactic presentations with group discussions and in-class exercises. Students are expected to read all assigned materials and complete a group assignment for oral and written presentation. After completion, students will be able to define social marketing, identify appropriate uses of social marketing, apply a model for developing, implementing and evaluating a social marketing campaign.

Requisites: Declared in Master of Public Health program or graduate standing only
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH 664 — PREVENTION OF OVERWEIGHT AND OBESITY
2 credits.

This course is intended to provide students with theoretical and practical knowledge to develop, implement, and evaluate obesity prevention interventions. This course will emphasize pediatric obesity prevention with a focus on nutrition and physical activity health behaviors and environments.

Requisites: Declared in Master of Public Health program or graduate standing only
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH 699 — INDEPENDENT READING
1-5 credits.

To gain additional information on specific research problems or advanced training in the areas covered by Prev Med staff.

Requisites: Consent of instructor
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

POP HLTH/I SY E 703 — QUALITY OF HEALTH CARE: EVALUATION AND ASSURANCE
1-3 credits.

Implementation, oversight, and management of quality-oriented activities in health care settings. Overview of current and historical activities, approaches, and issues confronting health care related to quality assessment, assurance, and improvement.

Requisites: Major or minor in population health, or cons inst
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH/ MEDICINE/ NURSING 705 — SEMINAR IN INTERDISCIPLINARY CLINICAL RESEARCH EVIDENCE
2 credits.

Exploration of interdisciplinary clinical research questions including strategies for assessing the evidence and conducting a systematic review of research. An interdisciplinary perspective is emphasized throughout the course.

Requisites: POP HLTH/ SOC/ POP HLTH 797 and BMI/ STAT/ B M I 542
Repeatable for Credit: No
Last Taught: Summer 2017

POP HLTH 709 — TRANSLATIONAL AND OUTCOMES RESEARCH IN HEALTH AND HEALTH CARE
3 credits.

This course seeks to review the conceptualization of translational and outcomes research in health and health care settings; to illustrate basic concepts and methods in research as applied to current issues in health and health care settings; and to understand the diverse perspectives that can be used to inform translational and outcomes research in different organizations, including those based within communities.

Requisites: Consent of instructor
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 711 — INTRODUCTION TO LIFE COURSE EPIDEMIOLOGY AND FAMILY HEALTH SERVICES RESEARCH
3 credits.

This course will deepen our understanding of how health is produced over the life course. A life course approach focuses on how early life experiences influence health across lives and possibly generations. This includes the concept of "linked lives" or how health is produced in the context of familial and social relationships. Using a life course and human development framework, we will explore a number of concepts explaining how exposures in early life lead to health outcomes at later life stages. Namely, we will examine critical or sensitive periods (i.e., “Barker hypothesis” or "fetal or biological programming"), cumulative effects, pathways and trajectories, risk and resilience, and intergenerational impacts (transmission of health across one or more generations). Through this lens, we will consider the biobehavioral processes that underlie the development of health across the life course. Together this theoretical and empirical evidence will be applied to the understanding of the evolution and persistence of health disparities. Data sources, study designs, and statistical approaches used in life course epidemiology and family health services research will also be reviewed and evaluated. Finally, we will explore implications for clinical and public health practice, policy, and health system development with an eye towards the development of effective and sustainable life course interventions.

We will conclude the course with an in-depth examination of three case-studies that will allow the students to apply their knowledge to specific life course and family health services research examples. The purpose of this course is to provide students with a foundation for understanding: 1) the terminology and theoretical framework used in life course epidemiology and family health services research; 2) biobehavioral pathways by which early life experiences impact health across the life course; 3) the data sources, study designs, and statistical approaches used in life course epidemiology and family health services research; 4) the implications for clinical and public health practice, policy, and health system development with an eye towards the development of effective and sustainable life course interventions.

Requisites: Graduate standing and either POP HLTH 795 or POP HLTH/ SOC 797; or consent of instructor
Repeatable for Credit: No
POP HLTH 712 — INTEGRATING MEDICINE AND PUBLIC HEALTH
1 credit.

The purpose of this elective is to provide 1st and 2nd year medical students and physician assistant students with an introduction to public health and opportunities to meet and discuss key concepts with an exciting variety of physician leaders who have integrated medicine public health in their careers.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 713 — EPIDEMIOLOGY OF HIV/AIDS
1 credit.

This course provides an overview of the HIV/AIDS pandemic in the United States and worldwide. Topics covered include a review of the epidemiology of HIV/AIDS, the natural history of HIV disease, strategies to prevent and treat HIV and local and global health impact with a focus on historically significant milestones as well as promising current and future research.

Requisites: PHS 797 Introduction to Epidemiology or permission from the instructor
Repeatable for Credit: No
Last Taught: Summer 2017

POP HLTH 714 — LEADERSHIP FOR POPULATION HEALTH IMPROVEMENT
3 credits.

This course is designed to deepen participants' understanding of their own leadership attributes and style, refine core leadership skills including communication, collaboration, negotiation, and advocacy, and build a framework for advancing population health improvement within and across organizations.

Requisites: Students must be in the Leadership in Population Health Improvement on-line Certificate and must have taken PHS 780, PHS 785, and PHS 879
Repeatable for Credit: No
Last Taught: Spring 2016

POP HLTH 715 — INTRODUCTION TO COMMUNITY ENGAGEMENT
1 credit.

The course will provide students with introductory knowledge and skills needed for appropriate community engagement to address community health issues.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 717 — PRINCIPLES OF POPULATION MEDICINE AND EPIDEMIOLOGY
3 credits.

Focuses on the basic science of public health and population medicine. Students learn about epidemiologic methods to understand the causes of disease, and evidence-based approaches for disease prevention, early detection and treatment, at the individual and community level.

Requisites: 1st yr Med st
Repeatable for Credit: No
Last Taught: Fall 2015

POP HLTH 718 — PRINCIPLES OF GLOBAL HEALTH CARE SYSTEMS
2 credits.

Addresses and analyzes differences in health status and methods of organizing and providing health services in countries with varying levels of development and types of socio-political systems. Develops an understanding of the various avenues of international cooperation in health.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/MED SC-M 719 — SEMINAR-CONTEMPORARY ISSUES IN HEALTH CARE
1-2 credits.

Lecture. Social, economic and political aspects of health care delivery, including health needs and demands, doctor shortage, health team, models of delivering care, health planning, cost and financing, quality of care and international systems.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Fall 2008

POP HLTH 721 — CONSPIRACIES IN PUBLIC HEALTH
2 credits.

Skepticism and conspiracism can be barriers to successful implementation of public health and medical interventions such as vaccination, fluoridation of water, and HIV treatment. Conversations between people with opposing viewpoints, whether face-to-face or via social media, often devolve to disparagement and dismissal. Awareness of or experience with such exchanges causes us to avoid tackling such “hot button” topics with friends, colleagues, and members of our communities. While it is all too easy to believe people who adopt conspiracy theories to be members of the fringe, research has shown that medical conspiracy theories are widely known, broadly endorsed, and highly predictive of many common health behaviors. Conspiracies in Public Health will prepare health professions students to educate communities about important public health and medical interventions.

Requisites: Professional standing
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 729 — PREPAREDNESS IN PUBLIC HEALTH
2 credits.

Provides an overview of various types of public health emergencies and disasters including the organizations and disciplines that prepare and respond to natural and unnatural emergencies. Students will gain an understanding of how public health officials, public health practitioners, state and local health department staff, health care personnel and emergency responders plan for and respond to public health emergencies. The role of the physician will specifically be explored.

Requisites: Graduate or professional standing
Repeatable for Credit: No
POP HLTH 750 — CANCER EPIDEMIOLOGY
2-3 credits.
This course will cover current knowledge on cancer occurrence and control in human populations. Design and analysis approaches appropriate for cancer epidemiology will also be discussed.
Requisites: Prev Med 797, 798; H Oncol 721 or cons inst
Repeatable for Credit: No
Last Taught: Spring 2011

POP HLTH/NURSING/PHARMACY/PHY ASST/PHY THER 758 — INTERPROFESSIONAL PUBLIC HEALTH LEADERSHIP
1 credit.
Provides students with an opportunity to engage in collaboration, problem solving and teamwork in an interdisciplinary framework as they prepare an Interprofessional Case Competition (Fall) or as they prepare a collaborative case conference for the health professional students on campus (Spring). As students from different healthcare and public health backgrounds interact, learn together and share their experiences, they will become better prepared to lead and collaborate professionally in the future.
Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 780 — PUBLIC HEALTH: PRINCIPLES AND PRACTICE
3 credits.
An interdisciplinary graduate-level course addressing population-based approaches to community health improvement, and features problem-based learning. A focus on contemporary issues; opportunities to work with a public health mentor and lectures by local, state and national figures.
Requisites: Enrollment in the Master of Public Health (MPH) program at UW-Madison, Grad st, or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 781 — PUBLIC HEALTH SEMINAR
1 credit.
Students will explore current public health issues, problems, and solutions while advancing their communication, facilitation, and leadership skills.
Requisites: POP HLTH 788
Repeatable for Credit: No
Last Taught: Fall 2014

POP HLTH 785 — HEALTH SYSTEMS, MANAGEMENT, AND POLICY
3 credits.
This course is designed to introduce students to the fundamental characteristics of health care systems.
Requisites: Health prof st or grad st; or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 786 — SOCIAL AND BEHAVIORAL SCIENCES FOR PUBLIC HEALTH
3 credits.
Students analyze public health issues from a social and behavioral sciences perspective, and critically examine the strengths and weaknesses of particular theories for developing effective population and community-based intervention programs.
Requisites: Grad or health professional student; or consent of instructor
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 787 — MPH FIELD EXPERIENCE SEMINAR
1 credit.
Unique seminar for MPH students to prepare them to work in field or community setting.
Requisites: Must be MPH student
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 788 — THE PUBLIC HEALTH FIELD EXPERIENCE
1-6 credits.
The field experience is required for all students in the master of public health (MPH) program and provides students with practical experience in a public health setting.
Requisites: POP HLTH 787
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017
POP HLTH/M&ENVTOX 789 — PRINCIPLES OF ENVIRONMENTAL HEALTH: A SYSTEMS THINKING APPROACH
3 credits.

This course provides an overview of the field of environmental health, using a systems thinking approach. Systems thinking recognizes that environmental health problem solving is complex and that solutions in one area may have positive or negative impacts on other areas. As an overview it provides an introduction to the history of environmental health within the field of public health from the local to the federal and global level. It will introduce multiple disciplines, methods and approaches to numerous environmental health topics. It includes introduction to methods and tools necessary for assessing human health risks from a variety of environmental hazards and exposures found in air, land, and water with a focus on physical and chemical risks. Additional details regarding specific hazard, exposure and health outcome data and their relationship to environmental health risk assessment, environmental health decision-making and management form a public health practice perspective will be discussed. Students will become familiar with the practice of environmental health lectures and case studies. A primary goal of this course is to address core environmental health competencies for Masters of Public Health students. In addition, this course is designed to help students think critically about complex problems and practice effective communication both in written as well as oral forms of communication. As such, it will provide an overview of fundamental information and tools that public health practitioners will need to know how to use. It will also lay the foundation for more high-level courses in the field of environmental health for those wishing to pursue aspects of this field in more detail. It is aimed at students with a diverse knowledge set and background coming into the course, a general sense of basic biology and chemistry will be helpful, but not necessary.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 790 — THE PHYSICIAN IN PUBLIC HEALTH AND PUBLIC HEALTH IN THE PHYSICIAN
2 credits.

This 2-credit elective course, designed exclusively for MD-MPH dual degree students, will provide an opportunity for students to continue or enhance work on the continuum of the MPH fieldwork and/or capstone project during Phase III of medical school through a one-month self-directed learning experience. This elective will be planned well in advance, and the month-long elective will be devoted entirely to a public health-related project that has been approved by the MD-MPH Director.

Requisites: Declared in the dual MD-MPH degree program
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH/KINES 791 — PHYSICAL ACTIVITY EPIDEMIOLOGY
3 credits.

Recommendations for and surveillance of physical activity in the U.S., and associations with health and disease at the population level. Emphasis on measurement techniques, study design and research considerations.

Requisites: Graduate or professional standing
Repeatable for Credit: No
Last Taught: Spring 2016

POP HLTH 794 — BIOLOGICAL BASIS OF POPULATION HEALTH
2 credits.

This course covers the physiology, biology and biochemistry of selected disease processes deemed to be important to students of population health sciences by virtue of their clinical significance including incidence, mortality and morbidity.

Requisites: Pop Hlth Grad st or MPH stdt; or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 795 — PRINCIPLES OF POPULATION HEALTH SCIENCES
1-3 credits.

Introduces students to the multiple determinants of health including medical care, socioeconomic status, the physical environment and individual behavior, and their interactions. Also covered will be the definition and measurement of population health, economic concepts in population health, and ethical and managerial issues in population health improvement. The three credit version of this course is intended for graduate students in the Population Health Sciences and other departments. The one credit version is required for MPH students.

Requisites: Declared in Population Health or Master of Public Health program
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 796 — INTRODUCTION TO HEALTH SERVICES RESEARCH
3 credits.

Introduces students to a variety of perspectives, substantive areas and methodological approaches to health services research that provide the foundation for understanding the structure, process and outcomes of the U.S. health care system.

Requisites: POP HLTH 795; or cons inst
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/SOC 797 — INTRODUCTION TO EPIDEMIOLOGY
3 credits.

Lectures and discussions on design, implementation and interpretation of epidemiologic studies; emphasis on methodologic problems in the measurement of disease frequency, natural history and risk factors.

Requisites: Grad st or healthcare professional program st or cons inst
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 798 — EPIDEMIOLOGIC METHODS
3 credits.

The main emphasis is the design and interpretation of epidemiologic studies. Includes hands-on experience in the evaluation of epidemiologic evidence, the analysis of epidemiologic data, and the discussion of strategies aimed to improve study validity and efficiency.

Requisites: POP HLTH/SOC 797; or cons inst
Repeatable for Credit: No
Last Taught: Spring 2017
POP HLTH 801 — EPIDEMIOLOGY OF INFECTIOUS DISEASES
3 credits.

Introduces basic methods to studying the epidemiology of infectious diseases and reviews infectious diseases of major public health importance. Covers the basics of microbiology, immunology, and laboratory-based methods and the principles of disease surveillance, outbreak investigation, mathematical models of disease transmission, and prevention strategies. The etiology, epidemiology, prevention, and treatment of ancient, modern, and emerging infectious diseases will be examined.

Requisites: POP HLTH/SOC 797; or cons inst
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH 802 — ADVANCED EPIDEMIOLOGY: ETIOLOGY AND PREVENTION
3 credits.

The course addresses the epidemiological basis for understanding the etiology and prevention of major diseases. Students integrate information about disease patterns, epidemiological methods, and published studies to identify research questions and design a project.

Requisites: Grad st, POP HLTH/SOC 797 798; or cons inst
Repeatable for Credit: No
Last Taught: Fall 2012

POP HLTH 803 — MONITORING POPULATION HEALTH
3 credits.

Students learn applied techniques for community health assessment—a core function of public health. Actual population health data (including census, natality, mortality, hospital discharge, behavioral risk factor) are retrieved from the Web for analysis and interpretation.

Requisites: POP HLTH/SOC 797
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 805 — ADVANCED EPIDEMIOLOGY: CAUSAL INFERENCE IN EPIDEMIOLOGICAL STUDIES
3 credits.

The focus of the course is on the use of viewpoints and design/analytical tools to render possible the estimation of causal effects in epidemiologic studies. Students learn about the rationale and use of study designs/analytic tools that build upon but are substantially different from the most common approaches used in epidemiologic research (experimental studies, case-control studies, and cohort studies).

Requisites: POP HLTH/SOC/POP HLTH 797 and POP HLTH 798
Repeatable for Credit: No
Last Taught: Fall 2017

POP HLTH 806 — ADVANCED EPIDEMIOLOGY: PRACTICE OF EPIDEMIOLOGY
3 credits.

The goals of the course are to apply and extend methodologic knowledge learned in prior courses in the Population Health Sciences epidemiology methods sequence (PHS 797, 798, 805; these are prerequisites) to selected key activities of a practicing epidemiologic researcher, including: study implementation; scientific writing and presentation; manuscript and grant peer-reviewing; measurement validation, simulation studies and sensitivity analyses; and, commonly-used epidemiology field instruments and methods.

Requisites: Population Health Sciences 797, 798 and 805
Repeatable for Credit: No
Last Taught: Spring 2017

POP HLTH/OBS&GYN 807 — REPRODUCTIVE AND PERINATAL EPIDEMIOLOGY
2 credits.

The course provides students with an overview of the current knowledge and research in reproductive and perinatal epidemiology. Through reading of the primary and secondary literature, students examine issues related to topics such as fertility, preconception health, and perinatal outcomes including maternal morbidity and mortality, pregnancy loss, and infant outcomes. Current evidence-based strategies designed to improve reproductive and perinatal outcomes are reviewed. Long-term health implications of pregnancy and infant health are considered. The classes will be structured to include faculty-led lectures, discussions with guest faculty, and student-led discussions.

Requisites: POP HLTH/SOC/POP HLTH 797
Repeatable for Credit: No

POP HLTH 820 — GRADUATE RESEARCH SEMINAR
1 credit.

Research seminar for students in the population health graduate program. Presentations by graduate students, professors, public health professionals and experts designed to cover the depth and breadth of research in the field of population health.

Requisites: Grad st in population health grad progmm
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

POP HLTH 845 — SEMINAR IN HEALTH AND MENTAL HEALTH ECONOMICS
1-3 credits.

This doctoral seminar provides an overview of current topics in health and mental health economics. The main objectives of this seminar is to acquaint students with important current topics, literature, and scholarship in this field. For other graduate students studying health economics, enrollment is by consent of instructor (to manage seminar size). Graduate-level study in microeconomics and econometrics is expected for any student enrolled in or auditing the course.

Requisites: Students who are predoctoral trainees in the NIMH Training Program are expected to take this seminar all semesters it is offered.
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016
**POP HLTH 847 — CARDIOVASCULAR EPIDEMIOLOGY**

1 credit.

For graduate students interested in the epidemiology of cardiovascular diseases. The main emphasis is the discussion of the population distribution, health impact, risk factors, treatment, and prevention of cardiovascular diseases.

**Requisites:** POP HLTH/SOC/POP HLTH 797

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**POP HLTH/ECON 848 — HEALTH ECONOMICS**

1-3 credits.

Health economics issues including demand, supply and pricing, market structure, medical malpractice, technological change, value of life, role of insurance, and other aspects of uncertainty.

**Requisites:** Graduate or professional standing

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**POP HLTH/AN SCI/GENETICS 849 — GENETIC EPIDEMIOLOGY**

3 credits.

This course will provide an introduction to genetic epidemiology. Topics will include a general overview of genetics and Mendelian and complex inheritance, as well as various elements of study design, including participant ascertainment; phenotype definition; biologic sample selection; genotyping, sequencing, and quality control; measurement of covariates, and choice of analytic methods. We will briefly discuss some of the original study designs and then focus on current study designs for the remainder of the class. Additional emerging topics will be briefly touched upon. Students will complete short homework assignments to enforce concepts learned during lectures, discuss journal articles, and prepare a very short grant application for the mid-term project. In the final weeks of class, students will work together to analyze data from a real genetic study, prepare tables, interpret the findings, and present their project to their peers.

**Requisites:** Graduate or professional standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

**POP HLTH/I SY E 875 — COST EFFECTIVENESS ANALYSIS IN HEALTH AND HEALTHCARE**

3 credits.

Basic ideas and tools of cost effectiveness analysis as applied in evaluating medical technologies. Addresses special problems and methods in assessing diagnostic technologies, including ROC analysis, and in measuring health for technology assessment. Uses "classical" and current journal literature.

**Requisites:** POP HLTH/SOC/POP HLTH 797 and B M I/POP HLTH/ B M I 552

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**POP HLTH 876 — MEASURING HEALTH OUTCOMES**

3 credits.

Provides a comprehensive understanding of health outcome measures, including generic health status measures, disease-specific measures, and consumer reports of the quality of care.

**Requisites:** Grad stt in population health Prev Med 795, 797 800; or cons inst

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**POP HLTH 879 — POLITICS OF HEALTH POLICY**

2-3 credits.

Current major U.S. health policy issues and the critical processes and forces that shape them. The course discusses the politics of health policy; key economic, social and ethical forces; and central players.

**Requisites:** Graduate or professional standing

**Repeatable for Credit:** No

**Last Taught:** Summer 2017

**POP HLTH/A A E/ENVIR ST/PUB AFFR 881 — BENEFIT-COST ANALYSIS**

3 credits.

This course will present the welfare economics underpinnings for evaluating the social benefits and costs of government activities. Issues such as uncertainty, the social discount rate, and welfare weights will be discussed; case studies from the environmental, social policy, and agricultural areas will be studied.

**Requisites:** Grad st, PUB AFFR 818 880 or POP HLTH/I SY E 875 at least one crse in econ or cons inst

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

**POP HLTH/GENETICS/MD GENET 888 — PUBLIC HEALTH GENOMICS**

1 credit.

Public health genomics uses knowledge gained from genetic and molecular research along with a consideration of ethical, legal, and social implications (ELSI) to prevent disease and improve the health of the population. Students enrolled in this course will be provided an introduction to public health genomics through a review of fundamental principles of genetics, followed by lectures and discussions on the use of genetic information in clinical and research settings and its implications for disease management and prevention. Students will also gain an awareness of policies that guide public health and will be able to discuss current ethical, legal, and social implications of these policies. These learning objectives will be met through readings and videos, lectures, and discussions of recent journal articles and current topics in public health genomics.

**Requisites:** Graduate or professional standing

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**POP HLTH 904 — SPECIAL TOPICS IN EPIDEMIOLOGY**

1-3 credits.

In-depth focus on current areas of epidemiologic investigation. Each semester one or more modules (e.g., cardiovascular, cancer, infectious diseases, women’s health, international, etc.) will be offered.

**Requisites:** Varies by section

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2017
POP HLTH 915 — INTERNATIONAL HEALTH SYSTEMS AND POLICY
2 credits.

Designed as an independent study with four modules: International Health System Performance; Health Systems in the Context of Global Health Needs; Health Systems in High Income Countries; and the Politics of Health System Development and Reform.

Requisites: Grad or health professional st (not M1-M3 st)
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

POP HLTH 917 — GENERAL PREVENTIVE MEDICINE AND PUBLIC HEALTH ELECTIVE
4 credits.

The 4th year public health elective will introduce the student to the role of physicians working in various fields of public health. Students can work with faculty from the Department of Population Health Sciences, Wisconsin Division of Public Health or Wisconsin State Laboratory of Hygiene on a public health or health policy project. The student will have the opportunity to select a health issue in Wisconsin, conduct a literature review, analyze relevant data, interpret the results, and write a report.

Requisites: Declared in the Medical program with 4th year standing
Repeatable for Credit: No
Last Taught: Fall 2016

POP HLTH/KINES 955 — SEMINAR - PHYSICAL ACTIVITY EPIDEMIOLOGY
1 credit.

Current research developments in physical activity epidemiology.

Requisites: Graduate or professional standing
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

POP HLTH 990 — RESEARCH
1-8 credits.

Cons inst.

Requisites: Consent of instructor
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017