

COURSE DESCRIPTIONS

Courses offered by College of Public Health departments are listed as both CPH and Graduate (BIOS, EPI, ENV, HPRO, HSRA) offerings. Certificate, MPH, MHA and DrPH students should register for the CPH listing. M.S. and PhD students should register for the graduate listing.

Course Descriptions

College of Public Health (CPH)

CPH 500 FOUNDATIONS OF PUBLIC HEALTH 3 Credit Hours

This is an introductory survey course, which will ensure that all public health students, within their first full year of study, are exposed to the fundamental concepts and theories that provide the basis for the body of knowledge in the field of public health. This course will prepare students to work in public health with a sound theoretical, conceptual, and historical basis for their work.

Cross List: HPRO 830.

Typically Offered: FALL/SP/SU

CPH 501 HEALTH BEHAVIOR 3 Credit Hours

The purpose of this course is to study the theoretical foundations of health behavior. Candidates will develop an understanding of the determinants of health behavior, the models, and theories that provide a framework for predicting health behavior, and the strategies employed to bring about behavioral changes for health and disease prevention in individuals and groups.

Cross List: HPRO 860.

Typically Offered: FALL/SP/SU

CPH 502 HEALTH SERVICES ADMINISTRATION 3 Credit Hours

This course prepares students with the knowledge and skills necessary for roles in healthcare administration. Throughout the course students will examine the responsibilities, challenges, and ethical considerations essential to health services administration. Major topics include health systems, quality improvement, regulatory compliance, human resources, finance, information technology, and the role of healthcare administrators. Additionally, students will learn how to analyze healthcare-specific performance indicators and apply evidence-based recommendations to improve efficiency and effectiveness in healthcare organizations.

Cross List: HSRA 873.

Typically Offered: FALL/SPR

CPH 503 PUBLIC HEALTH ENVIRONMENT & SOCIETY 3 Credit Hours

An introduction to environmental factors (including biological, physical and chemical factors) that affect the health of a community. The main focus will be the effects of exposures that have been associated with human health and environmental problems in the Midwest, specifically water and air pollutants related to animal feeding operations, arsenic in ground water, pesticides, herbicides, lead and radiation. The effects of global warming, ergonomic problems in the meat packing industry and occupational and environmental problems in health care will also be discussed.

Cross List: ENV 892.

Typically Offered: FALL

CPH 504 EPIDEMIOLOGY IN PUBLIC HEALTH 3 Credit Hours

This course introduces epidemiology as a basic science in public health. Students will gain the fundamental skills to interpret and critically evaluate the literature relevant to public health professionals. The basic principles and methods of epidemiology and their applicability to public health and population health practice and research are established. Measures of disease frequency and association, epidemiologic study designs, bias, confounding, screening, surveillance, and outbreak investigation are covered during the course.

Cross List: EPI 820.

Typically Offered: FALL/SPR

CPH 505 APPLIED RESEARCH IN PUBLIC HEALTH 3 Credit Hours

The purpose of this course is to provide an introduction to research methods in public health. Students will learn about the steps of scientific research. The course will cover topics including formulation of a research problem; sampling and research design; dissemination of research findings; and grant proposals. These topics will be discussed in detail in the context of critically reviewing several peer-reviewed scientific articles. Research ethics is large component of the course. Students will complete CITI Trainings as well as learn about institutional Review Board (IRB) processes and applications.

Cross List: HPRO 805.

Typically Offered: FALL/SPR

CPH 506 BIostatISTICS 3 Credit Hours

This course is designed to prepare the graduate student to understand and apply biostatistical methods needed in the design and analysis of biomedical and public health investigations. The major topics to be covered include types of data, descriptive statistics and plots, theoretical distributions, probability, estimation, hypothesis testing, and one-way analysis of variance. A brief introduction to correlation and univariate linear regression will also be given. The course is intended for graduate students and health professionals interested in the design and analysis of biomedical or public health studies; not intended for Ph.D. students enrolled in the Biostatistics Graduate Program.

Cross List: BIOS 806.

Typically Offered: FALL/SP/SU

CPH 507 GLOBAL APPLICATIONS IN PUBLIC HEALTH 3 Credit Hours

The course provides a survey of the field of global health, including health conditions, resources, and programs. The course deals with the application of the principles of public health to health problems of countries around the world, and global forces that affect health. Topics covered include global health policy, including tobacco control policies, comparative health systems, climate change, and environmental health; the global impact of infectious and chronic diseases; infant mortality; womens health; cultural issues in global health; global occupational health issues; and human rights and ethics in global health. The course is intended for graduate students in public health, health professionals and health professions students who seek an understanding of global public health issues.

Prerequisite: Instructor permission is required.

Cross List: HSRA 820.

Typically Offered: FALL

CPH 511 AGRICULTURAL HEALTH AND SAFETY 3 Credit Hours

This course is designed to provide basic information and skills to enable health care and safety professional to function in the anticipation, diagnosis, treatment, and prevention of occupational illnesses and injuries in the farm community.

Cross List: ENV 811.

Typically Offered: SUMMER

CPH 514 PLANNING AND EVALUATION 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to apply multi-leveled evidence-based policy and program approaches to improve public health. The course will guide students through planning and evaluating the impact of public health strategies based on the reach, effectiveness, scalability, implementation quality, and sustainability of these approaches in complicated and complex systems. Crosslisted: HPRO 814

Typically Offered: FALL/SPR

CPH 517 DESIGN OF MEDICAL HEALTH STUDIES 3 Credit Hours

This course is designed to prepare the graduate student to understand and apply principles and methods in the design of biomedical and public health studies, with a particular emphasis on randomized, controlled clinical trials. The major design topics to be covered include sample selection, selecting a comparison group, eliminating bias, need for and processes of randomization, reducing variability, choosing endpoints, intent-to-treat analyses, sample size justification, adherence issues, longitudinal follow-up, interim monitoring, research ethics, and non-inferiority and equivalence hypotheses. Data collection and measurement issues also will be discussed. Communication of design approaches and interpretation of subsequent analysis results also will be stressed. Concepts will be explored through critical review of the biomedical and public health literature, class exercises, and a research proposal. The course is intended for graduate students and health professionals interested in the design of biomedical or public health studies.

Prerequisite: BIOS 806/CPH506, or an equivalent course.

Cross List: BIOS 835.

Typically Offered: SPRING

CPH 528 APPLIED PRACTICE EXPERIENCE 3 Credit Hours

The purpose of this course is to provide all students with an applied, scholarly, and mutually beneficial experience in a public health practice setting. This experience augments the academic course work, meets community needs, and provides students with an opportunity to integrate and apply at least five foundational public health competencies. Students are expected to demonstrate mastery of public health principles, values and practice. All partner organizations must be approved by the Office of Public Health Practice. Applied practice experiences may involve governmental, non-governmental, non-profit, industrial and for-profit settings or appropriate university-affiliated settings. To be appropriate for applied practice experience activities, university-affiliated settings must be primarily focused on community engagement, typically with external partners. University health promotion or wellness centers may also be appropriate.

Prerequisite: Completion of 9 credit hours of course work that must include CPH 500 Foundations in Public Health. Completion of the APEX orientation, the Professionalism Training Module and all required paperwork.

Typically Offered: FALL/SP/SU

CPH 529 CAPSTONE EXPERIENCE 3 Credit Hours

The purpose of this course is to complete the capstone project. The capstone addresses a topic of public health significance and is evidence that the student can integrate skills and competencies from across the curriculum to conduct public health research and/or practice. Prior to registering for the course, students must identify a Capstone Chair from their department and form a committee to select foundational and concentration competencies to design a capstone experience appropriate to their educational and professional goals.

Prerequisite: Before students can register for CPH 529 Capstone Experience, the student must have: 1. Good academic standing, 2. Completed at least 36 credit hours that includes all required MPH core and concentration courses (If courses must be taken concurrently, approval required by program director and capstone committee chair or capstone course instructor), 3. Current Plan of Study signed by academic advisor within 90 days prior to registration, 4. *Formed their Capstone committee, 5. *Received approval of their proposal from their committee, 6. *Received IRB approval (if required). * Prerequisites not applicable for Capstone Course Track approved by capstone committee.

Typically Offered: FALL/SP/SU

CPH 534 INTERVENTIONS IN HEALTH PROMOTION 3 Credit Hours

This course will provide health promotion students with an opportunity to investigate, contrast, develop, implement, and evaluate a variety of intervention activities, to be applied in different settings. Theories regarding methods to enhance behavior change and teaching strategies to meet the health needs of a diverse population will be explored.

Cross List: HPRO 827.

Typically Offered: FALL

CPH 539 PUBLIC HEALTH: LEADERSHIP AND ADVOCACY 3 Credit Hours

This course incorporates public health leadership theory and practices that are grounded in biomedical and social science and sanctioned by public law. Also included is the politics of communities and organizations. Advocacy is emphasized as a key tool to secure funding and to help assure that local, state, and federal policy-makers will adopt, implement, and maintain important public health regulations, policies and programs.

Cross List: HPRO 895.

Typically Offered: SPRING

CPH 543 HEALTH LITERACY AND COMMUNICATION FOR HEALTH PROFESSIONALS 3 Credit Hours

This course is an in-depth study of health literacy and communication. Students will build competencies in health communication (from theory and practice) to promote individual and community health and well-being.

Cross List: HPRO 843.

Typically Offered: SPRING

CPH 545 INTRODUCTION TO HEALTH DISPARITIES AND HEALTH EQUITY 3 Credit Hours

The course provides a critical understanding of health disparities in the U.S. and examines the underlying social, cultural, biological, behavioral, economic, and political factors that contribute to such disparities in society.

Prerequisite: Instructor permission required.

Cross List: HPRO 809.

Typically Offered: FALL

CPH 546 INTRODUCTION TO MATERNAL AND CHILD HEALTH 3 Credit Hours

This course will introduce the life course approach in Maternal and Child Health (MCH), and address specific MCH topics (i.e. immunizations, nutrition, pre-term births) from the local, regional, and global perspectives, and organization and policy issues in MCH care in the U.S.

Cross List: HPRO 880.

Typically Offered: FALL

CPH 547 MATERNAL AND CHILD HEALTH THEORIES AND INTERVENTIONS 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to design intervention strategies to improve the status of children, women, and families. Effective maternal and child health interventions at all levels of Frieden's health impact pyramid will be examined. Emphasis will be placed on (a) the theoretical underpinnings of the interventions and (b) case studies of communities that have successfully implemented the interventions. The course is intended for graduate students and health professionals interested in research and practice with children, women, and families.

Prerequisite: CPH 546 / HPRO 880

Cross List: HPRO 881.

Typically Offered: FALL

CPH 548 LIFE COURSE HEALTH 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to apply life course theory to research and practice relevant to health at all life stages. The major topics to be covered include the physical, social, and emotional health of children, adolescents, and adults. Special emphasis will be placed on early determinants of health and disease. The course is intended for graduate students and health professionals interested in research and practice with children, women and families.

Cross List: HPRO 882.

Typically Offered: SPRING

CPH 550 EMERGENCY PREPAREDNESS: PREVENTION 3 Credit Hours

An introduction to emergency preparedness concepts such as the Incident Command System, The National Response Framework, agencies, infrastructures, and assets in place to plan for, and respond to emergencies.

Cross List: EPI 810.

Typically Offered: FALL

CPH 553 EMERGENCY PREPAREDNESS: RESPONSE 3 Credit Hours

An introduction to disaster response-related concepts such as Responder Safety and Health, Citizen Evacuation, Weapons of Mass Destruction, and Medical Surge among other topics.

Cross List: EPI 813.

Typically Offered: SPRING

CPH 554 EMERGENCY PREPAREDNESS: RESPOND AND RECOVERY 3 Credit Hours

An introduction to emergency preparedness concepts, focusing on disaster response-related concepts such as Medical Surge, Behavioral Health, and Mass Fatalities, in addition to short and long term disaster recovery topics.

Cross List: EPI 814.

Typically Offered: SPRING

CPH 555 PUBLIC HEALTH LAW 3 Credit Hours

This course will introduce graduate and professional students to legal processes, research, reasoning, and philosophy as it relates to public health. Students will review the legal and ethical foundations of public health measures and appreciate how judicial, administrative, and legislative activities can influence health-related outcomes. They will examine the dynamic tensions between civil liberties and public health measures, turning their analyses to current public health initiatives and dilemmas. Topics to be covered include: conceptual foundations of public health law, constitutional considerations, federal and state statutes and regulations, tort (civil) law, balancing competing interests (e.g. civil liberties v. monitoring, reporting, persuading, regulating at various levels), current issues emerging trends.

Cross List: HPRO 808

Typically Offered: SUMMER

CPH 556 DECISION ANALYSIS FOR HEALTH CARE AND ECONOMIC EVALUATION 3 Credit Hours

This course covers the methods and applications of decision analysis and cost-effectiveness analysis in healthcare technology assessment, medical decision making, and health resource allocation. At the conclusion of the class, students will have an understanding of the theoretical basis for economic evaluation and decision analysis, its application, and hands-on experience in the application of the methods. Among the topics covered are development of a research topic and research questions, development of a decision analytic model, estimation of costs and effectiveness, use of preference-based measures, addressing uncertainty, and preparation of a manuscript presenting a decision analytic study.

Prerequisite: CPH 506/BIOS 806 or an introductory course in probability or statistics is a mandatory prerequisite for this class.

Cross List: HPRO 876

Instructor: Tzeyu Michaud

Typically Offered: SPRING

CPH 557 RESEARCH OTHER THAN THESIS HEALTH PROMOTION, SOCIAL AND BEHAVIORAL HEALTH 1-4 Credit Hours

This course is for more advanced students who wish to pursue their research interests in selected areas of Medical Humanities.

Cross List: HPRO 896.

Typically Offered: FALL/SP/SU

CPH 559 SPECIAL TOPICS IN HEALTH PROMOTION 1-4 Credit Hours

A course designed for Masters students that focuses on selected topics or problems in Health Promotion, Social and Behavioral Health.

Cross List: HPRO 898.

Typically Offered: FALL/SP/SU

CPH 560 U.S. HEALTH CARE SYSTEM: AN OVERVIEW 3 Credit Hours

This course will offer the student an overview of the health and medical care delivery system in the U.S. Topics covered from a historical, economic, organizational, sociological, and political perspectives include the following: the history and evolution of health services, the role of the US Government in healthcare, special and international US Government health programs, US Public Health Systems, US health care delivery systems, urban and rural US health care, the US health insurance systems, pharmaceuticals and biomedical industry, healthcare and medical research, US healthcare workforce, healthcare technology and information systems, US healthcare laws and policy, financing the US healthcare system, professional organizations, quality and accreditation, and the future of healthcare in the US.

Cross List: HSRA 810.

Typically Offered: FALL

CPH 561 PUBLIC BUDGETING 3 Credit Hours

The purpose of the course is to familiarize public administration students with the basic characteristics and features of public budgets and enable them to deal competently with them.

Prerequisite: Not open to non-degree students.

Cross List: HSRA 840.

CPH 562 HUMAN RESOURCES MANAGEMENT IN HEALTH ORGANIZATIONS 3 Credit Hours

This course will offer the student an overview of the health and medical care delivery system in the U.S. Topics covered from a historical, economic, sociological, and policy perspective include the following: social values in health care; need, use, and demand for services; providers of health services (people and places); public and private payment systems; alternative delivery systems; and models from other countries. Current health care reform proposals will also be addressed.

Prerequisite: Not open to non-degree students.

Cross List: HSRA 841.

Typically Offered: SPRING

CPH 563 STRATEGIC PLANNING AND MANAGEMENT IN PUBLIC HEALTH ADMINISTRATION 3 Credit Hours

This course examines the theory and practice of strategic planning and management in public health, health services, and voluntary health and welfare organizations. Application of specific principles, concepts, and techniques of strategic planning and management for these organizations will be addressed. The roles and responsibilities of public health and health services administrators in developing, implementing, monitoring and revising strategy will also be examined.

Prerequisite: Instructor permission.

Cross List: HSRA 853.

Typically Offered: FALL

CPH 564 HEALTH ECONOMICS 3 Credit Hours

This course is designed to help students understand how the theories and models of economics can be applied to the study of health and health care. The examination of the markets (demand and supply) for health, health care and health insurance is stressed. In addition, the economic analytic tools such as microeconomic theories and economic evaluation methods will also be reviewed and introduced. The objective of this course is to equip students with the knowledge/tools to examine and analyze the problems/issues of health care from the perspective of economics.

Prerequisite: ECON 2200 (Principles of Economics-Micro) or its equivalent.

Cross List: HSRA 860.

Typically Offered: FALL

CPH 565 HEALTH CARE FINANCE 3 Credit Hours

This course is the required health care financial management course for the Health Care concentration in the MPA program and a required course in the MPH curriculum. Students are not expected to have prior coursework in financial management, managerial and financial accounting. The course does, however, assume the students have some experience with spreadsheet models. This course, which focuses on the application of financial management principles and concepts to health care organizations, consists of (1) instructor lectures, (2) case analyses, (3) presentations, and (4) two examinations. Much of the learning in this course will come from your own individual work and from interacting with other students, so the benefits that you receive will be directly related to your individual efforts.

Prerequisite: Assumes experience with spreadsheet models and statistics

Cross List: HSRA 872.

Typically Offered: FALL

CPH 566 HEALTH POLICY 3 Credit Hours

This course covers the fundamental issue of the health policy process by emphasizing the historical, social, economic, and political environment of contemporary US public health and health care policies. Students are expected to become knowledgeable about policy formation, implementation, modification, and evaluation within public health and health care systems. This course is intended for students who are enrolled in the MPH program and students from other graduate degree programs who have an interest in health policy.

Cross List: HSRA 874.

Typically Offered: FALL

CPH 567 HEALTH POLICY ANALYSIS AND EVALUATION 3 Credit Hours

This course will provide a framework for understanding how to analyze and evaluate the impact of health policies in public health and health care settings. Topics include structuring policy problems, gathering data for policy analysis, monitoring and evaluating policy performance, and communicating the results of policy analysis. The course is intended for students enrolled in the MPH program and students from other graduate degree programs who have an interest in analyzing and evaluating health policies.

Prerequisite: HPRO 805/CPH 505 and HSRA 874/CPH 566.

Cross List: HSRA 867.

Typically Offered: SPRING

CPH 568 GLOBAL HEALTH SYSTEMS 3 Credit Hours

This course provides an overview of the structures and roles of international organizations like the World Health Organization (WHO), United Nations Children's Fund (UNICEF), and the World Bank (WB) in global health, as well as the concepts of global health architecture and global health security. This course also provides insights into the core components and functions of different national health systems, including public health, around the world, how they are structured and how they operate, to achieve their national health goals, emphasizing the areas of similarity and the areas of differences. Other topics include global health economics and financing, global social determinants of disease and health, global healthcare and public health innovations, and healthcare and public health systems evaluation.

Cross List: HSRA 868

Typically Offered: FALL

CPH 569 HEALTH ADMINISTRATION LEADERSHIP 3 Credit Hours

Health Administration Leadership is designed to help students understand the concepts and challenges of leadership within health administration contexts. The course explores how leadership skills can be developed and applied effectively to lead and manage healthcare organizations. The course is concept driven, with an emphasis on applied experience from a healthcare administration perspective.

Typically Offered: SUM/FALL

Capacity: 25

CPH 570 HEALTH ADMINISTRATION LAW 3 Credit Hours

The Health Administration Law course is designed to help establish a foundation of health system law that can guide and shape future administrators' decision making. The health administration perspective of law and health care law surrounding the delivery of healthcare within organizations and systems are the foundation of the course. Additionally, legal concepts, laws, legal issues, proceedings, regulatory actions, and judicial processes within the context of health administration will be examined.

Typically Offered: SPRING

Capacity: 20

CPH 580 HEALTH CARE ORGANIZATIONAL THEORY AND BEHAVIOR 3 Credit Hours

This course focuses on introductory level of organizational theory (OT) and organizational behavior (OB) in health services research. Organizational theory is a macro examination of the organizations, focusing on the organization as a unit, and inter-organizational and environmental relationships. Organizational behavior is a micro approach to studying organizations, focusing on individuals in organizations as the unit of analysis.

Cross List: HSRA 830.

Typically Offered: FALL

CPH 585 MASTERS OF HEALTH ADMINISTRATION INTERNSHIP 3 Credit Hours

The internship is an intensive, full-time component of the masters of health administration program providing students both experience and opportunities to observe day-to-day health management operations in a healthcare organization. Skills and knowledge learned in the course of this internship will be used to prepare the student for career placement in management positions within the healthcare industry.

Typically Offered: SUMMER

CPH 586 MASTERS OF HEALTH ADMINISTRATION CAPSTONE 2 Credit Hours

The Master of Health Administration (MHA) capstone course immerses students in applying health administration theories, models, and practices to address healthcare issues in significant health administration, health system, or community health topics, utilizing qualitative and/or quantitative data to analyze the identified problem. The course culminates in a capstone project where students showcase their skills and cumulative knowledge in communication, leadership, professionalism, operational management, healthcare environment understanding, business analytics, process management, and research within the healthcare field.

Prerequisite: Completion of at least 36 credit hours, including all required MHA core and concentration courses or in the final semester of the program, formed committee, approved Capstone proposal paper and Approval Form sent to the course instructor, and in good academic standing.

Typically Offered: FALL/SP/SU

CPH 587 RESEARCH OTHER THAN THESIS HEALTH SERVICES RESEARCH AND ADMINISTRATION 1-4 Credit Hours

This course is for more advanced students who wish to pursue their research interests in selected areas of Medical Humanities.

Cross List: HSRA 896.

Typically Offered: FALL/SP/SU

CPH 589 SPECIAL TOPICS HEALTH SERVICES RESEARCH AND ADMINISTRATION 1-4 Credit Hours

A course designed for Masters students that focuses on selected topics or problems in Health Services Research and Administration.

Cross List: HSRA 898.

Typically Offered: FALL/SP/SU

CPH 590 ELEMENTS OF INDUSTRIAL SAFETY FOR HEALTH SCIENCES 3 Credit Hours

An introduction to safety in the general work environment with emphasis on selected OSHA safety regulations, human costs of injuries, safety programs and management, field trip work observations, risk assessment, hazard/risk communications. No previous experience or coursework in safety is required.

Prerequisite: ENV 892/CPH 503 or equivalent introductory environmental health sciences course, instructor permission.

Cross List: ENV 800.

Typically Offered: SPRING

CPH 591 OCCUPATIONAL HEALTH AND SAFETY FOR HEALTH SCIENCES 3 Credit Hours

This course is an introduction to fundamental concepts, methods, and application of occupational and safety for various industrial settings, including hazard analysis and control, OSHA regulations, workers compensation, safety program elements, and safety and health management.

Prerequisite: Graduate student status in health sciences or related discipline and instructor permission.

CPH 592 HUMAN FACTORS AND ERGONOMICS FOR WORK ENVIRONMENTS 3 Credit Hours

An introduction to fundamental concepts of physical work, human abilities and capabilities (ergonomics) including psychological and cognitive aspects of human work performance (human factors) for the reduction of occupational injuries and illnesses, reduced costs, productivity improvement, worker well-being and longevity, quality of work life, and job satisfaction.

Prerequisite: Graduate student status in health sciences or related discipline and instructor permission.

Cross List: ENV 804.

Typically Offered: FALL

CPH 594 ENVIRONMENTAL EXPOSURE ASSESSMENT 3 Credit Hours

The course will allow students to develop their understanding and knowledge of exposure assessment methods and the application of these methods to substantive issues in occupational and environmental health. The course emphasizes methodological principles and good practice, and highlights the many similarities and some interesting differences between occupational and environmental health.

Prerequisite: ENV 892/CPH 503 or equivalent introductory environmental health sciences course, BIOS 806/CPH 506 or equivalent introductory biostatistics course, instructor permission.

Cross List: ENV 816.

Typically Offered: FALL

CPH 595 SUSTAINABILITY, CLIMATE CHANGE AND HEALTH 3 Credit Hours

This course provides an overview of the emerging issue of climate change as it affects society (with a special emphasis on public health), and the development of strategic frameworks of action to prepare for a sustainable and healthy future. The course is divided into three broad areas: frameworks and fundamentals (basic concepts and root causes of climate change and environmental problems); sector assessments (root causes and system impacts; measurement and monitoring); and action (approaches to intervention, core competencies, and communication).

CPH 597 PRINCIPLES OF TOXICOLOGY 3 Credit Hours

An introduction to the principles and methods that are used to determine whether an adverse effect is a result of exposure to a specific agent. A primary purpose of toxicology is to predict human toxicity and human health risk assessment relies heavily on toxicological data obtained from animal studies. This course covers basic mechanisms of toxicity as they pertain to whole organisms, organ systems, and specific toxic agents. Cross List: ENV 888.

Typically Offered: SPRING

CPH 598 FUNDAMENTALS OF INDUSTRIAL HYGIENE 3 Credit Hours

This course provides fundamental knowledge to the graduate student, or fellow who may be interested in pursuing a career in occupational health and safety. The course is also designed for safety, health, environmental and management personnel who have industrial hygiene effort; anticipation, recognition, evaluation and control. Topics include chemical, physical, and biological hazards in the workplace.

Cross List: ENV 814

Typically Offered: FALL

CPH 599 PRINCIPLES OF BIOSAFETY 3 Credit Hours

This course is designed for graduate students and health professionals to explore biosafety principles and practices with the purpose of developing a Biorisk Management approach to biosafety. This will enable participants to "effectively identify, monitor and control the laboratory biosafety and biosecurity aspects of activities. This integrated education will allow the student to recognize risky activities from unintentional and intentional incidents involving biological materials and develop mitigation strategies to reduce exposures to these materials. The student will participate in hands on training using engineering controls as well as administrative controls. Competencies in donning and doffing personal protective equipment and use of a biosafety cabinet will be discussed and assessed. Participates will also learn how to develop a risk mitigation plan following the identification of hazards and risk assessment. The targeted audience include doctoral students interested in occupational health, researchers, professional students, and the biosafety profession.

Cross List: ENV 813

Typically Offered: FALL

CPH 600 PRINCIPLES OF FOOD SAFETY 3 Credit Hours

This course is intended for graduate students and health professionals who have an interest in understanding the complexities of preventing foodborne illness. There are no pre-requisites for this course, however the participants should be comfortable discussing themes that include basic scientific concepts, including chemistry and microbiology. This course is designed to ground the graduate student, professional student, or fellow in an understanding of the multifaceted responsibilities and science behind protecting the public's health through food safety. Major topics to be covered include sources, prevention, detection, management, and regulation of foodborne illness. Pre-req: A basic understanding of chemistry and microbiology is recommended.

Cross List: ENV 812.

Typically Offered: SUMMER

CPH 601 INTRODUCTION TO GIS IN PUBLIC HEALTH 3 Credit Hours

This course is designed to examine human-environment interactions and the influence of these interactions on public health in today's data-driven health care systems. Spatial data and information from spatiotemporal data can be a vital asset in answering the where, when, and why questions related to various health outcomes. This course will utilize a Geographical Information System (GIS) to visualize, analyze, manage, and present data. By implementing GIS tools and methods, healthcare providers, public health practitioners, and government agencies can gain a detailed perspective on large-scale and trending health issues such as the COVID-19 pandemic. Topics will be taught in the context of public health, with lectures and examples focused on public health (e.g. determinants of health, health care access, infectious disease epidemiology, environmental exposures, etc.) and supplemented with public health related journal articles to integrate the topics discussed with real world applications.

Cross List: ENV 801

Typically Offered: FALL

CPH 605 HUMAN HEALTH AND DISEASE IN PUBLIC HEALTH 3 Credit Hours

This course is designed to provide graduate students and health professionals with the knowledge of the physiology of the human health and the essential concepts of disease processes. It demonstrates the relevance and application of disease biology knowledge to the epidemiological research and practice. Students will learn how the human physiology works and the changes in pathophysiology. Students will learn specific disorders specifically pathophysiology, etiology, clinical signs, symptoms, and outcomes. Understanding pathophysiology will allow students to comprehend variations in disease burden, distribution and natural history at the individual and population levels. Students will learn about major diseases that have global public health importance.

Cross List: EPI 805.

Typically Offered: FALL

CPH 617 RESEARCH OTHER THAN THESIS ENVIRONMENTAL, AGRICULTURAL AND OCCUPATIONAL HEALTH 1-4 Credit Hours

This course is for more advanced students who wish to pursue their research interests in selected areas of Environmental, Agricultural Occupational Health

Cross List: ENV 896.

Typically Offered: FALL/SP/SU

CPH 619 SPECIAL TOPICS IN ENVIRONMENTAL, AGRICULTURAL AND OCCUPATIONAL HEALTH 1-4 Credit Hours

A course designed for Masters students that focuses on selected topics or problems in Environmental, Agricultural, and Occupational Health.

Cross List: ENV 898.

Typically Offered: FALL/SP/SU

CPH 620 CHRONIC DISEASE EPIDEMIOLOGY 3 Credit Hours

The target audience for this course includes, but is not limited to, student researchers and practitioners in the field of public health. The course will cover risk factors for major chronic diseases such as cancer, diabetes, musculoskeletal disease, and chronic lung disease. Through the course, students will learn advanced concepts and methodology in chronic disease epidemiology research, including disease surveillance and etiologic and outcomes research. Students will also gain experience developing a proposal to conduct an etiological study of a selected chronic disease.

Prerequisite: EPI 820/CPH 504 BIOS 806/CPH 506.

Cross List: EPI 812.

Typically Offered: FALL

CPH 621 APPLIED EPIDEMIOLOGY 3 Credit Hours

This course is designed to provide advanced-level graduate students with epidemiologic data analysis, interpretation and presentation skills. The course presents advanced principles and methods of Epidemiology through the use of simulated and actual research data. The course is suitable for both advanced-level master's students and doctoral students in epidemiology and related fields. The primary goal is to provide working knowledge of the fundamentals of epidemiology to graduate students who wish to further their careers in public health research.

Prerequisite: CPH 628 / EPI 845 Epidemiologic Methods

Cross List: EPI 821

Typically Offered: FALL

CPH 622 HOST AND PATHOGEN FACTORS IN PUBLIC HEALTH 3 Credit Hours

Infectious diseases public health threats manifest through interactions between a host (patient or community), a pathogen, the environment, and, in some instances, an additional vector (e.g., mosquito, fomite). In this course, graduate students and public health professionals will learn about host and pathogen factors, and ways in which they are explored and exploited in risk management. This application of microbiology and immunology for the benefit of public health is suitable for all graduate students and health professionals who wish to have experience in the planning of public health risk management of communicable diseases. It also sets the stage for students who plan to undertake a more nuanced study of Infectious Diseases epidemiology methods and applications. Students will read, engage in class and virtual discussions, complete quizzes, write, and present their work.

Cross List: EPI 822

Typically Offered: FALL

CPH 623 THEORY AND METHODS OF INFECTIOUS DISEASES EPIDEMIOLOGY 3 Credit Hours

Infectious diseases are as varied as they are numerous. Yet, core features of any evolving infectious threat determine both spread and the patient and community experience from disease. In this course, graduate students and public health professionals will focus predominantly on the theory, language, and core methods involved in characterizing epidemiologic facets of infectious diseases relevant to further advanced study, health emergency risk management, and myriad roles in the prevention and mitigation of these threats. Students will read, engage in class and virtual discussions, complete quizzes, write, and present their work.

Prerequisite: CPH 504/EPI 820, an equivalent epidemiology methods course or permission of instructor.

Cross List: EPI 825.

Typically Offered: SPRING

CPH 624 INTRODUCTION TO PUBLIC HEALTH INFORMATICS 3 Credit Hours

This course will introduce graduate students to the key concepts of public health informatics. During this course, the current and future impact of informatics on essential public health services and practices will be explored. Students will learn about informatics concepts and approaches including their role when implementing and operating public health informatics software and information systems. Major topics covered include common public health information systems, data quality, standards, interoperability, electronic health records, syndromic surveillance, health information exchanges, and data governance.

Prerequisite: EPI 820/CPH 504 or equivalent or instructor permission

Cross List: EPI 824

Typically Offered: FALL

CPH 626 HEALTH INFORMATION AND SURVEILLANCE FOR PUBLIC HEALTH PRACTICE 3 Credit Hours

This course focuses on the role of health information and health information systems for the practice of national, state- and community-level public health.

Prerequisite: BIOS 806/CPH 506 and EPI 820/CPH 504.

Cross List: EPI 835.

Typically Offered: FALL/SPR

CPH 628 EPIDEMIOLOGIC METHODS 1 3 Credit Hours

Topics covered in this course include epidemiologic study designs, quantitative measures of disease frequency and association, threats to validity, and causal inference. The general approach of this course is both theoretical and quantitative, focusing on the investigation of disease etiology and other causal relations in public health. The course is offered in a format built around lectures, group discussions, and analyses of epidemiologic data.

Prerequisite: CPH 506/BIOS 806 Biostats I; CPH 504/EPI 820 -

Epidemiology; CPH 651/BIOS 810 - Intro to SAS Strongly recommended.

Cross List: EPI 845

Typically Offered: FALL

CPH 630 EPIDEMIOLOGICAL METHODS IN OUTBREAK INVESTIGATIONS 3 Credit Hours

Disease outbreaks are emergency events that trigger rapid responses by public health officials to save lives and prevent suffering. This course teaches students how to detect, investigate, and control infectious and non-infectious outbreaks through lectures, case studies, and outbreak simulations.

Prerequisite: CPH 504 / EPI 820.

Cross List: EPI 826

Instructor: Patrick Maloney, Ph.D., MPH

Typically Offered: SPRING

CPH 631 EMERGENCY PREPAREDNESS: PROTECTION 3 Credit Hours

An introduction to emergency preparedness concepts, in preparation for naturally occurring disasters, intentional acts of terrorism, and new emerging infectious disease threats. Students will explore Critical Infrastructure protection, agriculture, and food safety, surveillance and detection of biological agents among other topics.

Cross List: EPI 811.

Typically Offered: FALL

CPH 637 SOCIAL EPIDEMIOLOGY 3 Credit Hours

The purpose of this course is to introduce students to the major social variables relevant to public health and health outcomes typical of the field of Social Epidemiology. Anticipated topics include: social class, poverty, education and occupation, gender, race, social networks/support, and work neighborhood environments. Pre-req: CPH 504/EPI 820 Epidemiology in Public Health, Cross-listed: EPI 837

Typically Offered: SPRING

CPH 647 RESEARCH OTHER THAN THESIS IN EPIDEMIOLOGY 1-4 Credit Hours

This course is for more advanced students who wish to pursue their research interests.

Cross List: EPI 896.

Typically Offered: FALL/SP/SU

CPH 649 SPECIAL TOPICS IN EPIDEMIOLOGY 1-4 Credit Hours

A course designed for Masters students that focuses on selected topics or problems in Epidemiology.

Cross List: EPI 898.

Typically Offered: FALL/SPR

CPH 650 BIOSTATISTICS II 3 Credit Hours

This course is designed to prepare the student to understand and apply advanced biostatistical methods needed in the design and analysis of biomedical and public health investigations. The major topics to be covered include multiple linear regression, analysis of covariance, logistic regression, survival analysis, and repeated measures analysis.

Prerequisite: BIOS 806/CPH 506 or an equivalent course.

Cross List: BIOS 808.

Typically Offered: SPRING

CPH 651 INTRODUCTION TO SAS PROGRAMMING 3 Credit Hours

An introduction to programming for statistical and epidemiologic analysis using the SAS Software System. Students will learn to access data from a variety of sources (e.g. the web, Excel, SPSS, data entry) and create SAS datasets. Data management and data processing skills, including concatenation, merging, and sub-setting data, as well as data restructuring and new variable construction using arrays and SAS functions will be taught. Descriptive analysis and graphical presentation will be covered. Concepts and programming skills needed for the analysis of case-control studies, cohort studies, surveys, and experimental trials will be stressed. Simple procedures for data verification, data encryption, and quality control of data will be discussed. Accessing data and summary statistics on the web will be explored. Through in-class exercises and homework assignments, students will apply basic informatics techniques to vital statistics and public health databases to describe public health characteristics and to evaluate public health programs or policies. Laboratory exercises, homework assignments, and a final project will be used to reinforce the topics covered in class. The course is intended for graduate students and health professionals interested in learning SAS programming and accessing and analyzing public use datasets from the web.

Prerequisite: BIOS 806/CPH 506 or an equivalent course.

Cross List: BIOS 810.

Typically Offered: FALL/SPR

CPH 652 BIOSTATISTICAL LINEAR MODELS: METHODS AND APPLICATION 3 Credit Hours

This course is designed to prepare the graduate student to analyze continuous data and interpret results using methods of linear regression and analysis of variance (ANOVA). The major topics to be covered include simple and multiple linear regression model specification and assumptions, specification of covariates, confounding and interactive factors, model building, transformations, ANOVA model specification and assumptions, analysis of covariance (ANCOVA), multiple comparisons and methods of adjustment, fixed and random effect specification, nested and repeated measures designs and models, and diagnostic methods to assess model assumptions. Interpretation of subsequent analysis results will be stressed. Concepts will be explored through critical review of the biomedical and public health literature, class exercises, an exam, and a data analysis project. Statistical analysis software, SAS (SAS Institute Inc., Cary, NC, USA.), will be used to implement analysis methods. The course is intended for graduate students and health professionals who will be actively involved in the analysis and interpretation of biomedical research or public health studies.

Prerequisite: BIOS 806/CPH 506 or an equivalent course, BIOS 810/CPH 651 or equivalent experience with SAS programming, calculus (including differential and integral calculus), and instructor permission.

Cross List: BIOS 818.

Typically Offered: FALL

CPH 653 CATEGORICAL DATA ANALYSIS 3 Credit Hours

Survey of the theory and methods for the analysis of categorical response and count data. The major topics to be covered include proportions and odd ratios, multi-way contingency tables, generalized linear models, logistic regression for binary response, models for multiple response categories, and log-linear models. Interpretation of subsequent analysis results will be stressed.

Prerequisite: BIOS 818/CPH 652 or an equivalent course, CPH 651/BIOS 810 or equivalent experience with SAS programming, and instructor permission.

Cross List: BIOS 823.

Typically Offered: SPRING

CPH 654 SURVIVAL DATA ANALYSIS 3 Credit Hours

The course teaches the basic methods of statistical survival analysis used in clinical and public health research. The major topics to be covered include the Kaplan-Meier product-limit estimation, log-rank and related tests, and the Cox proportional hazards regression model. Interpretation of subsequent analysis results will be stressed.

Prerequisite: BIOS 818/CPH 652 or an equivalent course, CPH 651/BIOS 810 or equivalent experience with SAS programming, and instructor permission.

Cross List: BIOS 824.

Typically Offered: FALL

CPH 655 CORRELATED DATA ANALYSIS 3 Credit Hours

A survey of the theory and methods for analysis of correlated continuous, binary, and count data. Major topics to be covered include linear models for longitudinal continuous data, generalized estimating equations, generalized linear mixed models, impact of missing data, and design of longitudinal and clustered studies. Interpretation of subsequent analysis results will be stressed. Concepts will be explored through critical review of the biomedical and public health literature, class exercises, two exams, and a data analysis project. Computations will be illustrated using SAS statistical software (SAS Institute Inc., Cary, NC, USA.). The course is intended for graduate students and health professionals who will be actively involved in the analysis and interpretation of biomedical research or public health studies.

Prerequisite: BIOS 818/CPH 652 or an equivalent course, CPH 651/BIOS 810 or equivalent experience with SAS programming, and instructor permission.

Cross List: BIOS 825.

Typically Offered: SPRING

CPH 656 BIOSTATISTICAL COMPUTING 3 Credit Hours

This course is designed for graduate students that are interested in statistical computing. The course will introduce graduate students to the R statistical language, PYTHON and their uses in biostatistical computing. Topics include introductory R, data management and manipulation, loops, vectorizing code, writing functions, coding shiny apps, pipe operators, resampling methods, data simulation and data visualization. In addition, students will be introduced to PYTHON and the R reticulate package for harnessing the power of PYTHON from within R.

Prerequisite: BIOS 806/CPH 506 or equivalent, CPH 651/BIOS 810 or instructor permission.

Cross List: BIOS 815

Typically Offered: FALL

CPH 657 BIOSTATISTICS THEORY I 3 Credit Hours

This course is designed to prepare students to have a solid understanding of the probabilistic tools and language (at a rigorous and advanced calculus level) needed as a foundation of biostatistical inference. Major topics to be covered include probability theory, transformations and expectations of random variables, families of distributions, random vectors, sampling distributions, and convergence. Prerequisite: Calculus I, II and III, or equivalent courses; and instructor permission.

Cross List: BIOS 801

Typically Offered: FALL

CPH 658 BIOSTATISTICS THEORY II 3 Credit Hours

This course is designed to prepare Masters students in Biostatistics to have a solid understanding of biostatistical inference. Major topics to be covered include random samples, data reduction, point estimation, hypothesis testing, interval estimation, and prediction for common parametric models.

Cross List: BIOS 802

Typically Offered: SPRING

CPH 659 INTRODUCTION TO BIOSTATISTICAL MACHINE LEARNING 3 Credit Hours

This course is designed to prepare graduate students to use modern statistical learning methods for modeling and prediction from data. Major topics to be covered include linear regression, classification (logistic regression, linear and quadratic discriminant analysis, K-Nearest Neighbors), resampling methods (cross-validation, the bootstrap), linear model selection and regularization (subset selection, shrinkage methods, dimension reduction), nonlinear approaches (polynomial regression, splines, Generalized Additive Models), tree-based methods (Classification and Regression Trees, bagging, random forests, boosting), support vector machines, deep learning, unsupervised learning (principal component analysis, clustering). The mathematical level of this course is modest, with only simple matrix operations.

Prerequisite: (i) At least one multivariate statistics course, eg CPH 650 (BIOS 808), CPH 652 (BIOS 818), CPH 653 (BIOS 823), CPH 654 (BIOS 824), CPH 655 (BIOS 825) or equivalent; (ii) CPH 656 (BIOS 815 Biostatistical Computing); or equivalent courses, and (iii) Instructor permission.

Cross List: BIOS 829

Instructor: Gleb R. Haynatzki, PhD

Typically Offered: SPRING

CPH 677 RESEARCH OTHER THAN THESIS IN BIOSTATISTICS 1-4 Credit Hours

This course is for more advanced students who wish to pursue their research interests in selected areas of Medical Humanities.

Prerequisite: Program permission, instructor permission.

Cross List: BIOS 896.

Typically Offered: FALL/SP/SU

CPH 679 SPECIAL TOPICS IN BIOSTATISTICS 1-4 Credit Hours

A course designed for Masters students that focuses on selected topics or problems in Biostatistics.

Prerequisite: Instructor permission.

Cross List: BIOS 898.

Typically Offered: FALL/SP/SU

CPH 700 HEALTH EQUITY AND COMMUNITY ENGAGEMENT 3 Credit Hours

This course prepares public health leaders with the essential knowledge and skills to lead health equity initiatives to ensure all people have meaningful access to necessary resources and support systems. Major topics to be covered include asset mapping, population inequities, and principles of community engagement. Students will evaluate the role of community organizations and apply collaborative community engagement strategies to address inequities.

Prerequisite: CPH 545/HPRO 809 Introduction to Health Disparities and Health Equity or equivalent course; DrPH or PhD student status or instructor permission.

Cross List: HPRO 900

Instructor: Nicole Kolm Valdivia

Typically Offered: SPRING

CPH 704 ADVOCACY AND POLICY ENGAGEMENT 3 Credit Hours

This course prepares public health leaders to be part of a policy-oriented workforce with the necessary knowledge, methods, and tools to think strategically and systematically about the implications of a policy, engage stakeholders to identify policy solutions, and advocate for new approaches with stakeholders and policymakers. Students will leverage actionable data, and ethical frameworks to assess policies at organizational, local, state, and federal levels. In addition, students will learn how to advocate for political, social, or economic policies or programs which will improve the health in diverse populations. Major topics include policy engagement, advocacy, communication, and how diversity influences policies.

Prerequisite: CPH 539/HPRO 895 Public Health Leadership and Advocacy or instructor permission; DrPH or PhD student status or instructor permission.

Cross List: HPRO 904

Instructor: Nicole Kolm Valdivia

Typically Offered: SPRING

CPH 705 PUBLIC HEALTH TEACHING AND TRAINING 3 Credit Hours

This course is designed to develop graduate students teaching skills and strategies necessary to meet the professional demands of conducting public health teaching and training. Major topics to be covered are adult learning theory, instructional design, conducting a needs analysis, training program evaluation, as well as creating teaching modules for the in-person, synchronous, and asynchronous environments.

Cross List: HPRO 906.

Instructor: Analisa McMillan, PhD, MSEd

Typically Offered: SUMMER

Capacity: 30

CPH 707 ADVANCED PUBLIC HEALTH LEADERSHIP AND MANAGEMENT 3 Credit Hours

This course will focus on implementing successful organizational change initiatives and equip professional students with the knowledge and skills to facilitate shared decision-making and consensus-building in organizations as leaders. Students will also assess their leadership strengths and weaknesses while learning about leadership, management, workforce evaluation, and sustainability. As public health leaders, they will acquire the necessary skills to drive organizational change and cultivate a collaborative decision-making environment.

Prerequisite: CPH 500/HPRO 830 Foundations of Public Health; DrPH or PhD student status or instructor permission.

Cross List: HPRO 907

Instructor: Nicole Kolm Valdivia

Typically Offered: FALL

CPH 710 RESEARCH GRANT PROPOSAL DEVELOPMENT 3 Credit Hours

This course offers graduate students and health professionals a practical experience writing a research grant proposal for submission to the National Institutes of Health (NIH). Students will learn how to formulate research questions, develop study aims, and build research designs closely tied to analysis plans and research outcomes. Students will learn how to find and respond to various federal and non-federal funding mechanism opportunities. Students will participate in a mock NIH study section, during which they will learn the NIH peer review process and they will critique research grant proposals. Throughout the course, students will work interactively with faculty members who have successfully served as principal investigators and co-investigators of multiple federally-funded research proposals or contracts in different disciplines. Prerequisite: CPH 504 or equivalent introductory epidemiology course, CPH 506 or equivalent introductory biostatistics course. Crosslisted: EPI 910.

Typically Offered: SPRING

CPH 711 COMMUNICATION FOR PUBLIC HEALTH LEADERS 3 Credit Hours

Decision making and communication in a crisis can make or break a public health response. Improving the quality of decisions and risk communication can save lives. In this course, students will learn how, as public health leaders, to effectively communicate what is known and unknown in and about any public health crisis or situation. Students will build the skills needed to be trusted public health messengers of information, including inclusive messaging by understating cultural context, health literacy, and the value of humility, will be covered. The course discusses risk perception, communication guidance, and news media portrayal of risks - all critical components of behavioral and psychological factors affecting health-related behaviors. Additionally, the course will guide students on practical tools around how to communicate with the media and policymakers and persuasive communication.

Prerequisite: CPH 500/HPRO 830 Foundations of Public Health; DrPH or PhD student status or instructor permission.

Cross List: ENV 911

Instructor: Lauren Sauer; Nicole Kolm Valdivia

Typically Offered: SPRING

CPH 712 SYSTEMS AND STRATEGIC THINKING 3 Credit Hours

This course prepares public health leaders with the critical skills to lead strategic planning initiatives, design performance monitoring systems, and create implementation and business plans to achieve strategic goals. Students will evaluate organizational stakeholder data, conduct internal and external environmental assessments, develop and communicate strategic goals, and leverage data trends to make strategic decisions that impact public health outcomes.

Prerequisite: DrPH or PhD student status or instructor permission; CPH 563/HSRA 853 Strategic Planning or instructor permission

Cross List: HSRA 912

Instructor: Nicole Kolm Valdivia

Typically Offered: FALL

CPH 715 MIXED METHODS RESEARCH 3 Credit Hours

The intent of this course is to provide an overview of mixed methods research to graduate students who are already familiar with quantitative and qualitative research. This introduction consists of defining mixed methods research, describing the history and foundations of this emerging form of research, and discussing strategies for locating and reading mixed methods studies in the literature. We will specify the types of mixed methods designs available and discuss the process of research as it relates to each of these designs. This process includes writing an introduction, developing a purpose statement and research questions, selecting a design, and collecting, analyzing and interpreting data within the designs as well as reporting and evaluating the study. This course will also discuss important issues and future directions that relate to mixed methods research. The course will have an applied focus where many students design a proposal for a mixed methods study (such as for their dissertation) as their final project.

Cross List: HPRO 903

Typically Offered: SUMMER

CPH 718 LEADERSHIP THEORY AND PRACTICE 3 Credit Hours

The course includes the study of leadership as well as the application of leadership theories, concepts, and skills. The course will explore leadership from the individual level, team level, and the organizational level. Students in this course will examine historical and contemporary leadership theories. Additionally, students will reflect on their leadership experiences through the lens of the introduced theories.

Typically Offered: SPRING

CPH 720 CLIMATE CHANGE AND HUMAN HEALTH 3 Credit Hours

This course is designed for doctoral students in environmental health who have an interest in climate change. Any graduate student with an interest in climate change may take this course. This course explores the science of climate change. Students will learn how the climate system works, the use of models, observations and theory to make predictions about future climate, and the connection between human activity and the current warming trend. The course also explores strategies to communicate the science of climate change to diverse stakeholders.

Cross List: ENV 905

Typically Offered: FALL

CPH 724 INFECTIOUS DISEASE MODELING 3 Credit Hours

This course is designed for graduate students and health professionals interested in utilizing mathematical models to predict communicable disease transmission and epidemic dynamics. The knowledge and skills acquired in this course will help students in designing strategies to mitigate infectious disease epidemics. Pre-reqs: CPH 623/ EPI 825 or equivalent infectious disease methods courses. Cross-listed: EPI 924

Typically Offered: FALL

CPH 725 THE PRACTICE OF INFECTIOUS DISEASE EPIDEMIOLOGY 3 Credit Hours

This course is designed to provide practical experience to students obtaining a PhD degree in Epidemiology with a concentration in Infectious Diseases (It may, however, be taken as an elective by doctoral-level students in other areas of concentration within the College of Public Health) As such, it covers practical problems which might arise in the practice of infectious disease epidemiology and is designed to prepare students about to embark on "real-world" careers with local and state health departments, clinical institutions, NGOs, and industry. These problems include (but are not limited to): bioterrorism preparation and response; planning for and managing patients with highly hazardous communicable diseases; implementing immunization programs; instituting and managing infection control and antibiotic stewardship programs; implementing isolation and quarantine orders; crafting patient safety initiatives; and overseeing quality assurance and laboratory management programs.

Prerequisite: CPH 504/EPI 820 Crosslisted: EPI 925.
Typically Offered: FALL

CPH 726 EXERCISE DESIGN 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to design, develop, and conduct tabletop, functional and full scale exercises to test disaster plans.

Prerequisite: CoPH Core Courses in Emergency Preparedness (EPI 810,811,813,814) (completed or in-progress) or equivalent experience in practice.
Typically Offered: FALL/SPR

CPH 727 MANAGING COMPLEX DISASTERS 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to manage a complex incident or disaster using principles of the national incident management system. Major topics to be covered include expansion actions as a disaster becomes more complex, establishing and operating an Area Command, and designing and managing a Multiagency Coordination System.

Prerequisite: CoPH Core Courses in Emergency Preparedness (EPI 810,811,813,814) (completed or in-progress) or equivalent experience in practice.
Typically Offered: FALL/SPR

CPH 728 DISASTER EPIDEMIOLOGY 3 Credit Hours

This course is designed to prepare the graduate student, professional student, or fellow to apply principles and methods of disaster epidemiology to their own practice. Major topics to be covered include opportunities and barriers to conducting epidemiologic studies during disasters, ethical considerations and assuring justice, equity, diversity and inclusion for vulnerable populations, epidemiologic methods that can be used for disaster epidemiologic studies. By the end of the course, the participant will be facile in initiating studies and understanding the results from epidemiologic studies during disasters.

Prerequisite: Epi 820/CPH 504 Epidemiology in Public Health
Cross List: EPI 928
Instructor: Julie Casani
Typically Offered: FALL

CPH 729 DISASTER LAW AND POLICY 3 Credit Hours

This course explores the legal and regulatory aspects shaping emergency preparedness law and policy in the United States. Students will examine various laws, regulations, and policies around disaster prevention, emergency response, advocacy, and community response and recovery. The direct implications of emergency preparedness laws, regulations, and policy on community perspectives, workplace authorizations, and broader emergency preparedness strategies will be covered. The course will also cover the operational aspects of policy, including the knowledge and skills necessary to navigate regulatory environments associated with emergency preparedness and response.

Prerequisite: DrPH student status or instructor permission
Typically Offered: FALL

CPH 730 ADVANCED EVALUATION AND QUALITY IMPROVEMENT 3 Credit Hours

This course will prepare graduate students to be effective public health leaders by focusing on advanced and continuous evaluation and quality improvement of public health programs and policies. Students will evaluate the effectiveness of public health programs and interventions using a variety of research, evaluation, and quality improvement methods. Additionally, students will translate research and evaluation outcomes to guide organizations to effectively transform programs, implement systems, and empower their workforces to advocate for and achieve optimal public health outcomes.

Prerequisite: CPH 514/HPRO 814 Planning and Evaluation or equivalent course; DrPH or PhD student status or instructor permission.
Cross List: HPRO 930
Instructor: Nicole Kolm Valdivia
Typically Offered: SPRING

CPH 731 COMMUNITY ORGANIZING AND ADVOCACY 3 Credit Hours

This course provides students with comprehensive knowledge of public health community organizing and advocacy from a leadership perspective, allowing them to become capable public health advocates who can work towards enhancing health equity within communities by building on CPH 700/HPRO 900 Health Equity and Community Engagement. Throughout this course, students will learn how to effectively communicate, advocate, and create positive impacts across communities by creating a collaborative process rooted in trust and respect. Course topics include conducting community audits, ethical issues in community organizing, facilitation methods, action planning, and issue selection for recommendations or interventions.

Prerequisite: CPH 700/HPRO 900 Health Equity and Community Engagement; DrPH or PhD student status or instructor permission.
Cross List: HPRO 931
Instructor: Nicole Kolm Valdivia
Typically Offered: SPRING

CPH 732 RESEARCH METHODS FOR ADVANCED PUBLIC HEALTH PRACTICE 3 Credit Hours

This course provides DrPH students with advanced training in research methods applicable to public health practice. Students will acquire study design, data collection, analysis, and interpretation skills for quantitative, qualitative, and mixed research approaches, emphasizing applying research methods to real-world public health problems and translating research findings into practice.

Prerequisite: DrPH student status or instructor permission
Instructor: Kendra Ratnapradipa, PhD
Typically Offered: SPRING

CPH 741 EPIDEMIOLOGIC METHODS IN APPLIED CLINICAL GENETICS 3 Credit Hours

This course is designed to prepare the graduate student and health professional on the theory and methods of genetic epidemiology of complex diseases using association studies. Major topics include: Mendelian inheritance, design strategies for genetic association studies, bias in genetic studies and population stratification, SNP selection, genotype, diplotype and haplotype analyses, linkage disequilibrium, Hardy-Weinberg equilibrium (HWE), gene by environment interactions, power analysis, critical review of genetic association manuscripts, and hands-on data analysis using statistical and specialized genetic software. Pre-reqs: CPH 504, CPH 506 and knowledge of a statistical software package (SAS or SPSS) or instructor permission. Typically Offered: FALL

CPH 745 ANALYTICAL EPIDEMIOLOGIC METHODS II 3 Credit Hours

This course is designed primarily for graduate and professional students interested in performing analyses of epidemiologic data. Topics include analyses of multinomial and longitudinal data, multiple imputation, Poisson regression, Geographic Information System (GIS) and genetic analyses. Students will practice their skills by performing SAS analyses of simulated and actual research data. Prerequisite: CPH 621, CPH 506, CPH 651 Typically Offered: FALL

CPH 746 EPIDEMIOLOGY IN PUBLIC HEALTH PRACTICE 3 Credit Hours

This course provides students the opportunity to explore public health problems and issues - such as infectious diseases, chronic diseases and preparedness - through the lens of epidemiology. By applying the concepts learned throughout their program coursework to current public health problems and issues, students will understand the practice of epidemiology as it relates to real life and informs public health programs and policies. This course is intended primarily for doctoral students in epidemiology and public health to apply their training to public health practice and research. Pre-req: CPH 628 Epidemiologic Methods or equivalent. Cross-listed EPI 946 Typically Offered: SPRING

CPH 752 MENTAL HEALTH EPIDEMIOLOGY 3 Credit Hours

In this on-campus course, students will learn about epidemiology of major mental and substance use disorders, critically review the published epidemiology studies on mental and substance use disorders, and develop a proposal to evaluate a population-based intervention program to prevent and control a mental or substance use disorder. The course will promote active learning and prepare students for real-world experience. This is an advanced-level epidemiology class for students, researchers, and practitioners in public health, medicine, nursing and other health science disciplines who completed EPI 820 (or equivalent) and EPI 845 (or equivalent). Cross List: EPI 952 Typically Offered: SPRING

CPH 753 CANCER EPIDEMIOLOGY 3 Credit Hours

The course covers the main concepts in cancer epidemiology, such as cancer incidence and mortality trends, cancer etiological factors, cancer prevention and control. Students will apply epidemiology research methods to the field of cancer and will learn how to identify research gaps and address them using epidemiology methods. In addition, the students will understand how cancer epidemiology contributes to policies that ultimately contribute to cancer prevention. Prerequisite: Epidemiology in Public Health (CPH 504/EPI 820) or equivalent course, or instructor permission. Cross List: EPI 953 Typically Offered: SPRING

CPH 755 ENVIRONMENTAL EPIDEMIOLOGY 3 Credit Hours

The course is designed to provide an advanced discussion of the epidemiology of environmentally-related disease and the application of epidemiologic concepts and methods to protecting public health from environmental hazards. Substantive topics include important environmental exposures; these are used to illustrate exposure assessment methodology, the dynamic nature of environments, the strengths and limitations of epidemiologic designs and the impact of regulation of environmental hazards in public health. Prerequisite: EPI 821, CPH 506, CPH 594 or instructor permission. Crosslisted: EPI 955. Typically Offered: SUMMER

CPH 757 SURVEY RESEARCH METHODS 3 Credit Hours

This course is designed to prepare the graduate students and working professionals with a strong foundation in survey research methodology. This is a comprehensive course covering the design, implementation, analysis, interpretation, and reporting of epidemiologic survey results. The course includes hands-on experience with data analysis using SAS. In this course, students will also learn to search, access and analyze data from national surveys to conduct epidemiologic studies. Upon completion of the course, students are expected to be able to design and analyze surveys to address particular research questions or evaluate public health policy. Prerequisite: CPH 628, CPH 506, CPH 651, students should consult with their advisor if other coursework or experience qualifies as prerequisite. Crosslisted: EPI 957 Typically Offered: FALL

CPH 758 EPIDEMIOLOGIC ANALYSIS OF HEALTHCARE DATA 3 Credit Hours

This course is designed for graduate and health professions students interested in analyzing healthcare data for epidemiologic and clinical research. Students will learn the unique challenges and opportunities of working with insurance claims data, electronic health records, national surveys and national registries. Students will also learn to use Geographic Information System (GIS) approaches to link social determinants of health and clinical outcomes. Students will practice their skills by performing hands-on analyses of simulated and actual research data. Upon completion of this course, students should be equipped with the tools necessary to analyze healthcare data and apply the results to address health care and public health challenges. Prerequisite: CPH 621, CPH 506, CPH 651. Typically Offered: FALL

CPH 760 EDUCATION THEORY AND APPLICATION 3 Credit Hours

This course introduces the Ph.D. student to basic pedagogy, teaching skills, and strategies necessary to meet the professional demands of teaching at the university level. Major topics covered are learning theory, pedagogy, andragogy, educational philosophies, instructional design, inclusiveness, content delivery, assessment creation, teaching methods and instructor engagement. Prerequisite: Ph.D. student or instructor permission Crosslisted: EPI 960 Typically Offered: FALL

CPH 796 DIRECTED READINGS OR RESEARCH 1-9 Credit Hours

This course is specific to doctoral level work in the College of Public Health. Content of this independent study may include research other than dissertation, directed readings, and other study of a doctoral level all under the supervision of a graduate faculty member. Prerequisite: Doctoral student status; program permission; advisor permission Typically Offered: FALL/SP/SU

CPH 798 DRPH PRACTICUM 1-6 Credit Hours

The purpose of this course is to provide an advanced applied practice experience, allowing opportunities for students to develop leadership competencies and contribute to a public health setting. Students work with senior public health practitioners and leaders to address a need identified by the host organization that directly relates to the student's academic goals and professional interests. Students are responsible for completing a work project that is meaningful to the organization and advances public health practice. The work product may be a single project or a set of related projects that demonstrate a depth of competence. Relevant organizations may include governmental, non-governmental, non-profit, industrial and for-profit settings. The practicum should take place within an organization external to the college. The applied practice experience may be completed within a student's own work setting.

Prerequisite: Students are eligible to begin work on their practicum upon completion of the following prerequisites: minimum 18 credit hours of coursework, good academic standing with a grade point average of at least 3.0, completion of the DrPH Learning Contract, and permission of instructor.

Typically Offered: FALL/SP/SU

CPH 799 DRPH INTEGRATIVE LEARNING EXPERIENCE 1-6 Credit Hours

The integrative learning experience is a practice-based dissertation that generates field-based products consistent with advanced public health practice designed to influence programs, policies or systems addressing public health.

Prerequisite: Permission of instructor

Typically Offered: FALL/SP/SU

CPH 876 DECISION ANALYSIS FOR HEALTH CARE AND ECONOMIC EVALUATION 3 Credit Hours

This course covers the methods and applications of decision analysis and cost-effectiveness analysis in healthcare technology assessment, medical decision making, and health resource allocation. At the conclusion of the class, students will have an understanding of the theoretical basis for economic evaluation and decision analysis, its application, and hands-on experience in the application of the methods. Among the topics covered are development of a research topic and research questions, development of a decision analytic model, estimation of costs and effectiveness, use of preference-based measures, addressing uncertainty, and preparation of a manuscript presenting a decision analytic study.

Prerequisite: CPH 506/BIOS 806 or an introductory course in probability or statistics is a mandatory prerequisite for this class.

Cross List: CPH 556

Instructor: Tzeyu Michaud

Typically Offered: SPRING