EPIDEMIOLOGY

GMS 7858 Causal Artificial Intelligence for Health Research 3 Credits
Grading Scheme: Letter Grade
This course covers foundational issues in "causal Artificial Intelligence" embedding machine learning with causal inference methods on real-world data, and methodologies for automated causal learning. Health research approaches such as target trials and transportability will be discussed, as well as Artificial Intelligence fairness to tackle health disparities and inequity.
Prerequisite: Instructor approval.GMS7858

PHC 6008 Cardiovascular Epidemiology 2 Credits
Grading Scheme: Letter Grade
Survey of major cardiovascular diseases including a review of design and methods for studying natural history, prevention, and treatment process.
Prerequisite: GMS 6800 , consent of instructor.

PHC 6009 Biology and Epidemiology of HIV/AIDS 3 Credits
Grading Scheme: Letter Grade
Examining the biological process by which HIV causes infection and AIDS, including the physiologic and cellular processes involved in HIV infection and treatment. Developing skills in finding and interpreting current epidemiologic data on HIV/AIDS, including risk factors, comorbid health issues, special populations, and health outcomes. Overview of HIV prevention strategies and their effectiveness. Special emphasis on epidemiology of HIV/AIDS in the rural south.

PHC 6014 Epidemiology, Prevention, and Control of Chronic Diseases II 3 Credits
Grading Scheme: Letter Grade
Survey of major chronic diseases not covered in PHC 6003. Emphasizes recent epidemiology research and findings.
Prerequisite: PHC 6001 and PHC 6003 or equivalent.

PHC 6034 Epidemic Investigation 2 Credits
Grading Scheme: Letter Grade
Principles of infectious disease investigation and features of all types of outbreaks. Problem-solving exercises of classic and current epidemics.
Prerequisite: GMS 6800, GMS 6801, consent of instructor.

PHC 6041 Landmarks in Psychiatric Epidemiology 2 Credits
Grading Scheme: S/U
Landmarks in psychiatric epidemiology, including mental health and substance use disorders, are reviewed with emphasis on student discovery. The focus is on findings, methodology, and historical development of methods in case finding and diagnosis; cohort discovery; and geographical, social, and community risk factors. Topics include relevance to current methodological challenges.

PHC 6517 Public Health Concepts in Infectious Diseases 3 Credits
Grading Scheme: Letter Grade
Topics and methods used in modern infectious disease epidemiology.
Prerequisite: PHC 6001 and PHC 6002.

PHC 6591 Maternal and Child Health Epidemiology 3 Credits
Grading Scheme: Letter Grade
This is a 3-credit course offered on campus to graduate students on the epidemiology of maternal and child health. This course is designed to provide a graduate level understanding of how epidemiological principles can be applied to maternal and child mortality and morbidity.
Prerequisite: PHC 6001 and PHC (or equivalent research methods coursework). Students with no prior instruction in epidemiology but with methodological coursework from another related discipline may be admitted with permission from the instructor.

PHC 6598 Foundations in Precision Medicine: Genetic Epidemiology 1 Credit
Grading Scheme: Letter Grade
Genetic epidemiology, a rapidly evolving field of research, utilizes specialized molecular and statistical methods to identify genetic factors that might be involved in disease etiology. This course provides an exposure to fundamental concepts, terminologies and principles in human population genetics and molecular biology relevant to understanding genetic epidemiologic approaches.
Prerequisite: Enrollment in the Certificate for Precision Medicine or permission of the instructor

PHC 6711 Measurement in Epidemiology and Outcomes Research 3 Credits
Grading Scheme: Letter Grade
Major designs and principles of measurement for epidemiology and health services outcomes research, with emphasis on use of primary data collection.
Prerequisite: PHC 6001 and PHC 6050 or equivalent.

PHC 6717 Public Health Surveillance 3 Credits
Grading Scheme: Letter Grade
The purpose of this course is to prepare master's- and doctoral-level students to be able to design, evaluate, and operate epidemiological surveillance systems, and to be able to critically evaluate surveillance systems and reports.
Prerequisite: PHC 6001 and PHC 6000, or equivalent graduate-level coursework in epidemiologic methods, or instructor permission.

PHC 6932 Psychiatric Epidemiology Online Seminar Series 1 Credit
Grading Scheme: S/U
Epidemiology seminars from the Department of Epidemiology and other epidemiology departments, and associated publications will be used to provide students with an understanding of new developments in the field of epidemiology as applied to psychiatric epidemiology.

PHC 6937 Special Topics in Public Health 1-6 Credits, Max 6 Credits
Grading Scheme: Letter Grade
Special Topics in Public Health

PHC 6939 CPE Psychiatric Grand Rounds 1 Credit
Grading Scheme: S/U
World-renowned experts are invited to address a wide spectrum of specialties and sub-specialties and often introduce new and interesting developments. Mental health care professionals and epidemiologists will receive up-to-date information on trends and techniques in psychiatry.
Prerequisite: Enrollment in Certificate in Psychiatric Epidemiology

PHC 6971 Research for Master's Thesis 1-4 Credits, Max 4 Credits
Grading Scheme: S/U
The thesis requires the student to formulate a research question, conduct relevant background research, generate hypotheses, gather and analyze appropriate data, interpret and discuss findings, and determine conclusions. Students submit a written thesis consistent with UF requirements, pass an oral defense of their research and submit their work for publication under the direction of a mentor.
Prerequisite: Satisfactory completion of the first semester of coursework and instructor's permission. All Human Subjects Participation/IRB required training must be completed prior to registering for this course.

PHC 7000 Epidemiology Seminar II: Critical Evaluation, Research Proposals, and Methods 2 Credits
Grading Scheme: Letter Grade
This course is taken in the second year of the epidemiology PhD program curriculum. Seminar series is designed to introduce students to a range of advanced epodemiologic concepts and research methods to help PhD students advance their dissertation ideas and help students obtain skills needed for a a PhD in epidemiology.
Prerequisite: PHC 6001 and PHC 6000 , one semester of biostatics, and PhD student status in epodemiology or permission of the instructor

PHC 7007 Cancer Epidemiology 3 Credits
Grading Scheme: Letter Grade
Providing students with skills to evaluate the burden associated with cancers and develop public health interventions to reduce the burden of cancer worldwide. From the population perspective, the course will familiarize students with exposures associated with cancer risk. Practical applications of genome analysis and phenotypic profiling are included/
Prerequisite: PHC 6001 and PHC 6000 or equivalent. PhD student status required; other students need instructor permission. Students with no prior instruction in epidemiology but with methodological coursework from another related discipline may be admitted.

PHC 7017 Advanced Epidemiologic Methods III 3 Credits
Grading Scheme: Letter Grade
To expand the methodology inventory by introducing advanced and new statistical and modeling methods to address measurement, descriptive, comparative, associative and causal relations in modern epidemiology.
Prerequisite: GMS 6800, GMS 6810, consent of instructor.

PHC 7038 Psychiatric Epidemiology 3 Credits
Grading Scheme: Letter Grade
Concepts, history, measures, methods and analytical techniques to study the risks, prevalence and incidence, course, comorbidities, and consequences of major mental disorders, in general and specific populations internationally.
Prerequisite: PHC 6000 and PHC 6011

PHC 7065 Advanced Skills in Epidemiological Data Management 2 Credits
Grading Scheme: Letter Grade
Provides knowledge and skills in data manipulation for population science. Included are: data context, concepts; relational databases; data collection, extraction; parallel manipulation of massive datasets; NoSQL systems, concepts. The course is designed for advanced students to learn the “code of best practice” for data engineering in population science.
Prerequisite: PHC 6052 Introduction to Biostatistical Methods and PHC 6000 Epidemiology Methods I, or equivalents, or instructor permission.

PHC 7083 Computational Data Science for Epidemiology 2 Credits
Grading Scheme: Letter Grade
This computational epidemiology course blends methodological, practical, and translational aspects with emphasis on new data science methods. The course is not intended to provide statistical training, but rather to teach students to recognize suitable computational approaches to handle data. Practice sessions will acquaint students with statistical and machine learning software.

PHC 7199 Topics in Precision Medicine and Public Health Informatics 1 Credit
Grading Scheme: Letter Grade
The course introduces methodological and translational topics in precision medicine and public health informatics and provides knowledge and skills for planning and managing such research.
Prerequisite: Epidemiology Methods I and II and a SAS course, or graduate statistical and quantitative research courses in any relevant department, or permission from the instructor.

PHC 7427 Ethics in Population Science 2 Credits
Grading Scheme: S/U
Covering federally mandated topics in the Responsible Conduct of Research: Data Acquisition, Management, Sharing, Ownership; Conflict of Interest/Commitment; Human Subjects; Animal Welfare; Research Misconduct; Publication Practices and Responsible Authorship; Mentor/Trainee Responsibilities; Peer Review; and Collaborative Science.
This ethics course is for those enrolled in research intensive graduate programs.
Prerequisite: Advanced degree or PhD candidacy or permission of the instructor.

PHC 7594 Genetic Epidemiology 3 Credits
Grading Scheme: Letter Grade
Covers fundamental concepts and principles in genetic epidemiology. At the completion of this course, students are expected to critically discuss literature, design and conduct basic genetic analysis, and interpret research finding. Advanced methods course for PhD program.
Prerequisite: PHC 6000, PHC 6011 (can be taken concurrently), and PHC 6050C. Talk to the instructor for a prerequisite waiver or further information. For PhD students; MS/MPH students may contact the instructor for permission.

PHC 7595 Introduction to Molecular Epidemiology 3 Credits
Grading Scheme: Letter Grade
Covering the theoretical concepts in molecular epidemiology and use of biomarkers in epidemiologic studies. Class topics include: basics of molecular epidemiology, potential uses and limitations of biomarkers, sample collection and storage, issues in epidemiologic study design and analysis, and discussion of specific research examples involving molecular markers.
Prerequisite: Knowledge of basic concepts in epidemiology and study designs: PHC 6001

PHC 7727 Grant Writing for Population Health Research 2 Credits
Grading Scheme: Letter Grade
This course provides practical instruction in the grant process, with a specific focus on National Institutes of Health (NIH) procedures. It provides the student with experience in writing parts of the grant application and in reviewing other's grant applications. It also contains a Mock Grant Review session to assist students in understanding the process and content of grant review.
Prerequisite: PHC 6011 Epidemiology Methods II

PHC 7901 Epidemiology Literature Review and Critique (Journal Club) 1 Credit, Max 3 Credits
Grading Scheme: S/U
Preparing students to perform peer-review and to think critically. In weekly class discussion sessions, students will review peer-reviewed, published research studies that demonstrate innovative or faculty epidemiologic content or methods. Feedback will be given by student peers and faculty.
Prerequisite: PhD candidacy status or permission from the instructor

PHC 7902 Scientific Writing for Peer Reviewed Publications for Popular Science 1 Credit
Grading Scheme: Letter Grade
Practice reviewing and critiquing research studies.
Prerequisite: PhD student status or permission of the instructor ;
Corequisite: Conducting mentored doctoral research

PHC 7910 International Field Epidemiology 3 Credits
Grading Scheme: S/U
This is an independent study for a student who whishes to accomplish a primary data collection effort internationally.
Prerequisite: PHC 6011 Epidemiology Methods II

PHC 7916 National Field Epidemiology 1-3 Credits
Grading Scheme: S/U
This applied epidemiology field experience is designed as an opportunity for doctoral students to integrate their growing expertise in epidemiology in a field research experience among a population in the United States.
Prerequisite: PHC 6011 Epidemiology Methods II

PHC 7918 Independent Study 1-3 Credits, Max 3 Credits
Grading Scheme: S/U
Independent Study is designed for graduate level students who want to pursue in depth an area of study not provided in regularly offered courses. It can involve independent readings or independent projects under the guidance of a faculty sponsor.
Prerequisite: Consent of faculty member supervising the study.

PHC 7934 Seminar I: Epidemiology Past, Present, and Future 2 Credits
Grading Scheme: Letter Grade
The principal goals of this doctoral seminar include becoming familiar with major programs of research in epidemiology, discussing findings and implications od classic/prominent epidemiologic studies, reviewing the strengths and weakness of major epidemiologic study designs, and applying knowledge of epidemiologic study design to students' formulation of their own research studies.
Prerequisite: PhD standing

PHC 7979 Advanced Research 1-12 Credits
Grading Scheme: S/U
Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

PHC 7980 Research for Doctoral Dissertation 1-15 Credits, Max 15 Credits
Grading Scheme: S/U
Research for Doctoral Dissertation