Jinan University of Lebanon

Faculty of Public Health

Course Descriptions for the Graduate Public Health Genetics Program
2022/2023

Common Track Courses

PHE400 Applications of Epidemiology in Public Health
This course includes an in-depth study of the epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events. The student will be familiarized with the theory and application of major statistical techniques used in public health as well as to the concept of incidence and prevalence of both communicable and non-communicable diseases. Examples will be stressed with reference to assumptions and limitations. This course will also provide students with necessary skills needed to interpret the epidemiologic literature relevant to health education and health communication.

PHE410 Legal, Ethical, and Social Issues in Public Health
This course focuses on the systematic approaches of ethics and offers a wide spectrum overview of professional ethical concerns including: the nature of health, disease and illness, health promotion and disease prevention, rights, access, and the limits of health care, the physician-patient relationship truth telling and confidentiality, influence of the administration in health service organizations, the formation of health policy, and the planning of health services. Problems that will be discussed also include: issues emerging during moral judgment, cultural relativism, and subjectivism. The course would also introduce the students to potential legal, ethical, and social barriers complicating the incursion of new advances in public health and related-technologies into public and private healthcare delivery efforts.

PHE420 Statistical Models in Public Health
This course covers the aspects of collection, statistical modeling, and methods used in complex biomedical and public health data analysis. Case-based models with primary emphasis on translating subject-area questions into statistical models will also be presented. Students will be trained on the implementation of these models and the interpretation of outputs. The course also highlights the linkage between statistical and subject-area science and policy aspects of the models.

PHE430 Health Informatics
The course covers the major concepts and practices of health informatics including major applications, commercial vendors, decision support methods and technologies, analysis, design, implementation, and evaluation of healthcare information systems. International standards, new opportunities, and emerging trends and current challenges in the development and implementation of health informatics for problem based learning approaches (PBL) or implicated in inter-disciplinary health care systems are also visited.

PHE440 Health Policy Development
This course considers economic, socio-political, and other forces that influence policy formulation and access to care. It gives an overview of the administrative problems and interventions that affect all public health practitioners while formulating and applying public health policies to improve health care, health care delivery, and the health status of populations.

Specialty Track Courses

PHG450 Current Progress in Genetic Analysis
This is a mixed course with theoretical and practical parts covering various basic laboratory methods in molecular genetics. Students will have an opportunity to gain a hands-on experience in conducting biochemical and DNA experiments. It also covers the safety, efficacy, strengths and weaknesses of the laboratory assays they may later use to generate important endpoint data in patient-oriented research studies.

PHG460 Genes, Environment, and Human Disease
The focus of this course is on the interaction between genes and specific environmental and/or occupational exposures. Detailed evaluations of specific examples of gene-exposure interaction along with the underlying science of such examples, medical consequences, potential policy, social implications of current and future scientific knowledge, and review of current and pending legislation that address these issues are also covered. Diseases that represent public health challenges and different mechanisms of gene-environment interactions are also examined.

PHG470 Genetics and Genomics in Public Health
The course offers an in-depth examination of genetics at both the molecular and population levels. Students are engaged in the critical analysis of the main current contributions of genetics to public health. The course also goes through several examples of public health genetics including role and type of genetic factors that contribute to disease, population prevalence and distribution of morbidity influenced by genetic factors, public health approach to primary, secondary, and tertiary prevention of genetic disorders, and concepts, goals, and strategies of genetic services. The notion of public health genomics is also introduced through examples of genetic, ethical, political, and social issues emerging in the wake of the Human Genome Project.

PHG500 Cancer Genetics
This course reviews the socio-demographic magnitude of cancer, basic concepts of cancer biology, and the causes of cancer. All these topics are covered by: studying the molecular and cellular biology of cancer; explaining the basic mechanisms of carcinogenesis leading to cancer; clarifying the role of chemicals, viruses, and radiation in inducing mutations; and also highlighting genetic factors in human cancer. Natural history of cancer is also presented with analysis of time trends in cancer incidence, mortality, survival, and geographic distribution. Role of environmental factors (whether ecological, industrial, or occupational) in cancer causation, fundamental issues in cancer screening, and applications to public health and medical practices are also discussed.

PHG510 Genomics of Infectious Disease
This course gives an up-to-date overview of the advances in genetics and genomic technologies that are used to understand and combat classical and emerging infectious diseases, viral pandemics, and drug-resistant pathogens. This course also emphasizes how interactions of both host and pathogen are being revealed using novel genomic technologies, and how this information can be translated into disease management and therapies.

PHG520 Contemporary Issues in Public Health Genetics
This course focuses on contemporary issues of interest in genetics and public health in an advanced seminar-style format. The activity of student participation is assessed through given assignments, required readings, and authoring short reports. Students are also expected to make presentations and lead discussions. Student evaluations are based on class participation, written reports, and class presentation.

Thesis Courses

PHG598 Independent Study
The student has to develop a proposal for an empirical research in consultation with a faculty supervisor. The proposed topic has to be successfully presented by the student and approved by a faculty committee.

PHG599 Master's Thesis
This is a research-based thesis that offers students the opportunity to work on a comprehensive, individual project of suitable complexity for results to be published for expert audience. Supervisors are expected to guide students in planning, conducting, and writing the thesis with the belief that writing is thinking, writing is design, and writing forces students to visualize their ideas into reality.