

GSPH Course Descriptions

October 29, 2018

EPIDEM 2004 PATHPHYLG ACROSS LIFE SPAN**Credit(s): 04.0**

This course is designed to provide the student with a comprehensive theoretical foundation of the phenomena that produce alterations in human physiologic function in diverse populations across the life span. Information gained in this course will prepare the student for subsequent courses related to the diagnosis and management of disease processes associated with pathophysiologic dysfunction/alterations in people of various ethnic/cultural groups across the life span.

[Effective summer 2017, term 2177, revised course description.]

EPIDEM 2012 NEUROEPIDEMIOLOGY**Credit(s): 02.0**

This course focuses on the application of the methods of epidemiology to understand the pathogenesis and etiology of conditions affecting the central nervous system. This course covers epidemiological approaches, etiological perspectives and methodologies to assess disorders of the central nervous system (CNS), with a special emphasis of neurocognitive assessment and neuroimaging methods. This course also provides guided and critical knowledge of existing neuroepidemiological studies through the research practicum. In addition to students pursuing Doctoral and Master level degrees in Epidemiology, this course is designed to reach trainees in a variety of fields, including medicine, neurology, psychiatry, physical medicine and rehabilitation, neuroscience, psychology and computer science. Emphasis is placed on: a. descriptive epidemiology methods; b. factors that influence vulnerability to onset, progression and response to treatment of neurological diseases, including geographic variations; c. methodologies to assess disorders of the central nervous system (CNS), including behavioral neuropsychological assessments and cutting-edge multimodal neuroimaging. Separate sessions will be available upon request for students less familiar with epidemiology methods (descriptive, analytic, experimental).

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2017 POPULATION NEUROSCIENCE SEM**Credit(s): 01.0**

This seminar focuses on the methods and current literature in population neuroscience. Population neuroscience draws from multiple fields, including epidemiology, neuroimaging, and cognitive psychology, to understand the intrinsic (e.g. genetic) and extrinsic (e.g. environmental) factors that contribute to brain structure and function in various populations (healthy, aging, and diseased).

[New course for fall 2016, term 2171.]

EPIDEM 2019 INT MULTMOD NEURIMG APP POP NS**Credit(s): 02.0**

There have been great advances in neuroimaging techniques, which allow neuroscientists to visualize molecular, cellular and system physiology and functions. The Introduction to Multimodal Neuroimaging course will teach the underlying principles of neuroimaging techniques, including data modeling and visualization. Special emphasis will be on the discussion of the strengths and limitations of each technique, and on novel approaches to utilize complementary imaging modalities. The course will teach the principles and research applications of neuroimaging modalities via basic lectures and workshops that emphasize the integration of multiple imaging modalities.

[New course summer 2019, term 2197.]

EPIDEM 2023 PARTCPTRY MODLNG & SIMUL IN PH**Credit(s): 03.0**

Prerequisite(s): BIOST 2041

COMPUTATIONAL MODELING AND SIMULATION HAS BECOME CENTRAL TO PUBLIC HEALTH POLICY DESIGN AND DECISION-MAKING AT ALL LEVELS, FROM LOCAL TO INTERNATIONAL. OVERWHELMINGLY, MODEL-BUILDING HAS BECOME AN INTERDISCIPLINARY TEAM EFFORT, IN WHICH DOMAIN EXPERTS (E.G., PHYSICIANS, PUBLIC HEALTH PROFESSIONALS, EPIDEMIOLOGISTS, INFECTIOUS DISEASE MODELERS, POLICY MAKERS, AND COMPUTER PROGRAMMERS) ALL PARTICIPATE IN CONSTRUCTING MODELS. UNLIKE COURSES IN MODELING PROPER--WHERE MATHEMATICAL OR PROGRAMMING TECHNIQUES ARE TAUGHT--THIS COURSE EQUIPS STUDENTS TO BE "PARTICIPATORY" MODELERS (WORKING WITH PROGRAMMERS AND OTHER MODELERS), AND OFFERS HANDS-ON EXPERIENCE IN WORKING WITH PROGRAMMERS, AND IN EVALUATING ONE'S COLLABORATIVE MODEL, THROUGH SENSITIVITY ANALYSES AND APPROPRIATE VISUALIZATION. OTHER TOPICS WILL INCLUDE HOW TO PRESENT MODEL RESULTS, HOW TO CONSUME THEM, AND HOW TO MATCH THE TECHNIQUE TO THE PROBLEM IN PUBLIC HEALTH.

EPIDEM 2110 PRINCIPLES OF EPIDEMIOLOGY**Credit(s): 03.0**

Epidemiology is a scientific discipline which seeks to identify and describe patterns of disease occurrence, identify determinants of disease, and evaluate disease prevention and health care treatment efforts. With its focus of study in human populations, epidemiology is directly linked with public health research, policy, and practice. This course provides an introduction to the fundamental definitions, terminology, concepts, methods, and critical thinking used in epidemiology. The material presented in this course is designed to lay the foundation for future study and practice in public health activities.

[Effective summer 2017, term 2177, revised course description]

EPIDEM 2141 LIFESTYLE INTERVENTION: THEORY**Credit(s): 02.0**

Translating the findings of clinical trials of lifestyle intervention for disease prevention into community settings is increasingly important. This course will provide the conceptual foundation needed for such public health initiatives and serves as a key component of the Prevention, Lifestyle Intervention, and Physical Activity Area of Emphasis within the Department of Epidemiology. The background and rationale for behavioral lifestyle intervention will be covered in this course, as well as the relationship of lifestyle behaviors to chronic disease, with a focus on diabetes and cardiovascular disease. By attending this lecture-style course, students will receive behavioral lifestyle intervention training based upon a modified version of the Diabetes Prevention Program intervention protocol, called the Group Lifestyle Balance (DPP-GLB) program, which was adapted for use in the community setting. Upon successful completion of this class, each student will also receive a Certificate confirming that he/she was officially trained as a coach for the DPP-GLB intervention program.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2142 LIFESTYLE INTERVENTION PRACTCM**Credit(s): 03.0****Prerequisite(s): EPIDEM 2141**

THIS COURSE FOLLOWS THE LIFESTYLE INTERVENTION TRAINING THEORY COURSE. THE FOUNDATION FOR THIS PRACTICUM IS THE GROUP LIFESTYLE BALANCE (GLB) PROGRAM, A BEHAVIORAL LIFESTYLE INTERVENTION TRAINING BASED UPON A MODIFIED VERSION OF THE DIABETES PREVENTION PROGRAM INTERVENTION PROTOCOL. THE GLB HAS ALREADY BEEN DEVELOPED AND EVALUATED BY THE COURSE INSTRUCTORS. THE LIFESTYLE INTERVENTION TRAINING PRACTICUM WILL PROVIDE STUDENTS WITH THE OPPORTUNITY TO UTILIZE THEIR THEORETICAL KNOWLEDGE FOR BEHAVIORAL LIFESTYLE INTERVENTION WITH HANDS-ON APPLICATION IN THE FIELD. THIS COURSE IS A KEY COMPONENT IN THE PREVENTION/LIFESTYLE INTERVENTION AREA OF EMPHASIS WITHIN THE DEPARTMENT OF EPIDEMIOLOGY, PROVIDING THE PRACTICAL EXPERIENCE NEEDED TO DELIVER THE GROUP LIFESTYLE BALANCE PROGRAM INDEPENDENTLY. STUDENTS ARE REQUIRED TO PROVIDE THEIR OWN TRANSPORTATION TO THE PRACTICUM SITE.

EPIDEM 2143 SOCIAL EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

This course is designed to introduce students to a broad overview of the field of social epidemiology related to the history and development of the field including the theoretical underpinnings, conceptual approaches, current topic areas, and research methods. Social epidemiology reveals how social processes are intrinsically linked to the health of populations and individuals. Social epidemiology takes into account the social, psychological, biological, and medical determinants of disease and health and uses a multidisciplinary approach to analyzing and solving complex contemporary social issues. This course will emphasize the role of social determinants of health in relation to health equity. Teaching methods include lectures, readings, class discussions, and written assignments.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2150 EPID CARDIOVASCULAR DISEASES**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

In this course, we hope not only to guide you to a better understanding of cardiovascular disease and its epidemiology, but also to help develop your critical and presentation skills. We will do this by "critiquing" an article most sessions and having a twenty-minute student presentation based on recent statements of the American Heart Association.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2151 PHYSICAL ACTIVITY EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

Physical inactivity is a major risk factor for many chronic diseases as identified in the Surgeon General's Report. This course will provide an up-to-date overview of the area of physical activity epidemiology, from the evidence of the relationships between physical activity and/or sedentary behavior and various chronic diseases, to methodological issues pertaining to the assessment of physical activity and/or sedentary behavior, to lifestyle efforts that includes physical activity in population studies, all of which will have a special emphasis on minority groups.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2152 STDNT WRKSHP CARDIO DS EPID**Credit(s): 01.0**

This course is designed to be a supplement to the standard epidemiology coursework. It is a "hands on" workshop that will provide the opportunity for students to practice many of the concepts that they learn in class in the context of CVD epidemiology. It will also cover some areas which are not covered by the current curriculum, including an introduction to subclinical CVD, professional development, reliability analyses, and formal presentations of analysis results.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2160 EPIDEMIOLOGY INFECTIOUS DISEAS**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

The goal of this course is to provide students with a basic understanding of epidemiologic techniques used to describe patterns of infectious disease transmission and risk for infection. In addition, students will learn about the epidemiology, public health impact, and prevention and control measures for selected infectious diseases. This course includes a series of lectures and practical exercises to introduce students to both the application of epidemiologic skills pertaining to infectious diseases and the public health concepts associated with specific infectious diseases.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2161 METHODS INFECTIOUS DISEAS EPID**Credit(s): 01.0****Prerequisite(s): EPIDEM 2110 and EPIDEM 2160**

Covers important topics in infectious diseases epidemiology, including public health surveillance, emerging infectious diseases, the role of infectious diseases in the etiology of chronic diseases, and epidemiologic study designs and laboratory methods used in infectious diseases epidemiology. Course includes lectures, readings, and mid-term (take home) and final examinations.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2163 GLBL EPID OF VACCINES & VCCNTN**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

This course will provide students with knowledge and skills related to the study of vaccines and vaccination programs in the US/EU and in low- and middle income countries. This course will prepare students for entry-level positions in vaccine research or programming for academic, government, or private sector institutions. This course will provide a broad introduction to a wide range of vaccine related topics ranging from biological mechanisms of vaccines to vaccine financing. Within this range of topics, the course will focus heavily on the epidemiological study of vaccine efficacy, safety, effectiveness, and impact. The course is organized around four themes: 1) introduction; 2) vaccines; 3) research and development; and 3) vaccination programs.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2166 GLBL CTRL OF AIDS/HIV & TB**Credit(s): 01.0****Prerequisite(s): EPIDEM 2110**

This course will deal with the epidemiology of infection with human immunodeficiency virus (HIV) and Tuberculosis (TB). Current knowledge of the natural history, biology, virology or microbiology, epidemiology and clinical aspects of AIDS as well as treatment and vaccine efforts against HIV and TB will be reviewed. Descriptive, analytic and experimental epidemiologic studies will be critically reviewed to provide a synthesis of our current understanding of the pathogenesis of these infectious diseases.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2170 CHRONIC DISEASE EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

This course will reinforce epidemiological concepts, research skills and public health concepts in the context of the study of chronic diseases and associated risk factors. The course will provide an overview of the prevalence, incidence and risk factors for major chronic diseases that face the U.S. population and the population around the world.

[Effective fall 2017, term 2171, revised course description.]

EPIDEM 2171 CANCER EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

The course reviews basic cancer biology, reviews classic descriptive cancer epidemiology, considers the role for modern biomedical techniques in studies of cancer etiology, and reviews the active hypotheses regarding the etiology of common and uncommon human cancers. Specific topics include biomarkers and intermediate endpoints, tobacco and alcohol associated cancer, viral associated cancer, endocrine related cancer, and nutrition related cancer.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2180 EPIDEMIOLOGICAL METHODS 1**Credit(s): 03.0****Prerequisite(s): EPIDEM 2110 and BIOST 2041**

This course is an introduction to the epidemiology methods used in research. The course is designed for students in the Graduate School of Public Health with a modest statistical and data management background. Students will use SAS, a statistical software package, to analyze data sets. This course will focus on the appropriate application of various study designs and statistical methods for answering research questions, as well as the proper interpretation of results derived from these methods. Students will be expected to participate in class discussions that extend and apply the topics covered in lectures and reading to epidemiology research articles and epidemiology in practice.

[Eff spring 2019, term 2194: created Recitation for EPIDEM 2180 for which enrollment is required.]

[Also revised Reqs: Pre-reqs EPIDEM 2110 and BIOST 2041--removed co-req BIOST 2042.]

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2180 EPIDEMIOLOGICAL METHODS 1 - RECITATION**Credit(s): 00.0**

Classroom instruction usually associated with a lecture which facilitates interaction between the student and the instructor.

[Eff Spring 2019, term 2194, a recitation was added for EPIDEM 2081; be sure to enroll in offered section of recitation.]

EPIDEM 2181 DESIGN/CONDUCT OF CLN TRIALS**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

THE COURSE SURVEYS METHODS IN THE DESIGN AND CONDUCT OF CLINICAL TRIALS. CLINICAL TRIALS REQUIRE SUCCESSFUL COLLABORATION OF CLINICAL, ORGANIZATIONAL AND STATISTICAL SKILLS. THIS COURSE WILL FOCUS ON CLINICAL AND ORGANIZATIONAL ISSUES, SUCH AS PATIENT SELECTION, RECRUITMENT, ENDPOINT DEFINITION AND PROTOCOL DEVELOPMENT. THROUGHOUT THE SEMESTER, STUDENTS DEVELOP A CLINICAL TRIAL PROPOSAL THAT EMPHASIZES THE APPLICATION OF THE CONCEPTS LEARNED. THE COURSE WILL COMPLEMENT COURSES IN BIOSTATISTICS ON THE STATISTICAL ANALYSIS OF CLINICAL TRIALS.

[Title changed effective Fall 2015 Term (2161). Previous title: Design of Clinical Trials]

EPIDEM 2183 RDNG ANLZNG INTRPTG PH MEDL LIT**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and EPIDEM 2180 and (BIOST 2042 or BIOST 2049)**

THIS COURSE PROVIDES THE OPPORTUNITY TO ANALYZE, INTERPRET AND CRITIQUE ORIGINAL RESEARCH ARTICLES. ASSIGNMENTS CONSIST OF ORAL AND WRITTEN REVIEWS OF RECENTLY PUBLISHED PAPERS. A LITERATURE REVIEW PAPER ON A TOPIC CHOSEN BY THE STUDENT IS ALSO REQUIRED. LECTURE TOPICS INCLUDE ASSESSING STUDY VALIDITY, SUBJECT SELECTION, BIAS, CONFOUNDING, LABORATORY METHODS, RESULTS PRESENTATION, QUALITY CONTROL, STATISTICAL ANALYSES, LIBRARY SEARCHES, AND BIBLIOGRAPHIC DATABASE DEVELOPMENT.
(Permission of the instructor required.)

[Eff spring 2019, term 2194, Pre-reqs; EPIDEM 2110 and 2180 and (BIOST 2042 or 2049)--added 2049.]

EPIDEM 2184 SEM EPDMLGC & PBLC HLTH PRSNTN**Credit(s): 01.0**

THIS COURSE PROVIDES AN INTRODUCTION TO EPIDEMIOLOGIC AND PUBLIC HEALTH PRESENTATION FOR SCIENTIFIC AND LAY AUDIENCES. STUDENTS HAVE THE OPPORTUNITY TO PRESENT RESEARCH FROM THEIR COMPREHENSIVE EXAMINATIONS, DISSERTATION DEFENSES, AND SCIENTIFIC MEETINGS. STUDENTS MAY ALSO DEVELOP COMMUNITY HEALTH LECTURES FOR THE GSPH COMMUNITY HEALTH SPEAKERS BUREAU. STUDENTS WILL RECEIVE FEEDBACK FROM PEERS AND FACULTY. PRESENTATION IS NOT REQUIRED. ALL STUDENTS WILL PROVIDE IN-CLASS PRESENTER EVALUATION. UPON REGISTRATION, CONTACT DR. CATHERINE HAGGERTY, 412-624-7377, TO SCHEDULE YOUR PRESENTATION.

EPIDEM 2185 INTRODUCTION TO SAS**Credit(s): 02.0**

This course is an introduction to SAS, a statistical software package commonly used to perform data preparation, statistical analysis, and graphical presentation of results. The course consists of lectures and four lab sessions, where students will practice in a guided manner what was taught during the preceding lectures. The aim of this course is to teach students how to write basic SAS programs to import data, export data, create data sets within SAS, clean data, prepare data sets for analysis and apply statistical, as well as graphical, procedures. Students will also learn to make informed decisions regarding the appropriate SAS commands and options to use for these tasks and will be asked to use SAS for solving a set of simple specific research questions. Upon completion of this course students will feel comfortable using SAS as a tool to conduct research and know how to subsequently further develop their own SAS programming skills.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2187 EPIDEMIOLOGICAL METHODS 2**Credit(s): 03.0****Prerequisite(s): EPIDEM 2180 and BIOST 2041 and BIOST 2042**

This course is an introduction to advanced epidemiology and statistical methods used in clinical and public health research. The focus of the course is on the appropriate selection and application of statistical methods for answering research questions as well as the proper interpretation of results derived from these methods. Students will learn about the analysis of categorical data, survival data, and longitudinal data. The sample size and power issues involved when using these methods will also be covered. Students will be introduced to the causal inference framework, including the use of propensity scores and inverse probability weighting, and dynamic modeling. Students will gain experience with the statistical methods studied in this course by analyzing data sets with SAS.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2200 EPIDEMIOLOGY AND HEALTH SERVICES**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

THE COURSE SURVEYS EPIDEMIOLOGIC METHODS AND APPROACHES, AS APPLIED TO THE STUDY OF HEALTH SERVICES AND MEDICAL TECHNOLOGIES. THE COURSE PLACES PARTICULAR EMPHASIS ON MEASUREMENT AND DESIGN ISSUES WHICH IMPACT ON THE VALIDITY OF HEALTH SERVICES RESEARCH STUDIES. THE COURSE DEVELOPS A SYSTEMATIC APPROACH TO THE ASSESSMENT OF MEDICAL TECHNOLOGIES AND TO THE APPLICATION OF EPIDEMIOLOGIC AND OTHER SCIENTIFIC INFORMATION TO THE FORMULATION OF HEALTH POLICY.

EPIDEM 2210 SPECIAL STUDIES - ESSAY**Credit(s): 01.0 to 15.0**

RESEARCH CREDITS FOR MASTER'S ESSAY. ALSO APPLIES TO CREDITS FOR DOCTORAL RESEARCH PRIOR TO PASSING THE DOCTORAL COMPREHENSIVE EXAM.

EPIDEM 2213 INDEPENDENT STUDY**Credit(s): 01.0 to 12.0**

PROPERLY QUALIFIED STUDENTS MAY UNDERTAKE SPECIAL STUDY OR RESEARCH WHICH DOES NOT APPLY TO THE MASTER'S ESSAY OR DOCTORAL DISSERTATION. THIS STUDY MUST BE DONE WITH PERMISSION OF THE SPECIFIC FACULTY MEMBER WHO WILL SUPERVISE THE WORK.

EPIDEM 2214 PUBLIC HEALTH INTERNSHIP**Credit(s): 01.0 to 04.0****Prerequisite(s): EPIDEM 2110 and BIOST 2041**

THIS INTERNSHIP PROVIDES AN OPPORTUNITY TO GAIN VALUABLE KNOWLEDGE AND EXPERIENCE THAT WOULD NOT NORMALLY BE AVAILABLE THROUGH COURSEWORK. PLACEMENTS MAY BE OUTSIDE OF THE UNIVERSITY OF PITTSBURGH (E.G., IN HEALTH SERVICES ORGANIZATIONS, CLINICS, HEALTH DEPARTMENTS, COMMUNITY-BASED ORGANIZATIONS WORKING WITH "AT-RISK" POPULATIONS) OR WITHIN THE UNIVERSITY. EACH SPECIFIC PLACEMENT IS TO BE AGREED UPON BY EACH STUDENT AND HIS/HER FACULTY ADVISOR, BASED ON THE STRENGTHS, NEEDS, AND CAREER/ACADEMIC GOALS OF STUDENTS. INTERNSHIP SITES SHOULD PROVIDE A MINIMUM OF 200 HOURS OF PUBLIC HEALTH ORIENTED WORK. STUDENTS ARE ENCOURAGED TO PURSUE PLACEMENTS BEYOND THE ONLINE LIST AND TO THINK CREATIVELY ABOUT THE DOMESTIC AND INTERNATIONAL POSSIBILITIES. STUDENTS ARE ENCOURAGED, BUT NOT REQUIRED, TO DEVELOP THEIR MASTER'S ESSAY BASED ON THEIR INTERNSHIP EXPERIENCE.

[Removed prereq PUBHLT 2014--no longer required for MPH as of fall 2016; effect PS 1/1/2018.]

EPIDEM 2215 TEACHING PRACTICUM**Credit(s): 02.0**

THIS COURSE IS DESIGNED TO PROVIDE DOCTORAL STUDENTS WITH OPPORTUNITIES TO DEVELOP PRACTICAL SKILLS IN TEACHING AND MENTORING STUDENTS TAKING EPIDEMIOLOGY COURSES. AS TEACHING ASSISTANTS, STUDENTS MAY LECTURE, GRADE HOMEWORK AND EXAMS, LEAD REVIEW SESSIONS, HOLD OFFICE HOURS OR MAINTAIN COURSE BLACKBOARD SITES. THEY MAY ALSO HELP PLAN, UPDATE OR EXPAND COURSE SYLLABI OR TEACHING MATERIALS. COURSE GOALS INCLUDE IMPROVEMENT IN ORAL AND WRITTEN COMMUNICATION SKILLS AND EXPOSURE TO THE PROCESS OF PLANNING AND IMPLEMENTING A COURSE.

EPIDEM 2220 APLD SPATIAL/COMMUNITY EPIDEM**Credit(s): 03.0****Prerequisite(s): EPIDEM 2110 and (BIOST 2011 or BIOST 2041)**

The purpose of this course is to provide a conceptual understanding of the field of environmental epidemiology and to provide the spatial statistical tools for geospatial analysis. Topics will include: study design and approaches in environmental epidemiology investigations, statistical issues in the analysis and interpretation of such studies, and "Hands on" training in software and tools for analysis of spatio-temporal variations in health and disease with respect to demographic, environmental, behavioral, socioeconomic, genetic, and infectious risk factors. The course will provide an overview of health effects of environmental exposures. This includes the investigation of cancer and other disease clusters, health effects of water and air pollution, radiation threats and exposures and proximity to toxic waste sites. Basic tutorials in Arc GIS (10.3) and Geoda freeware will be provided. [Effective spring 2017, term 2174, revised course description & removed the prereq BCHS 3015.]

EPIDEM 2221 GEOSPATL MAP&SPATL ANALYS EPID**Credit(s): 02.0****Prerequisite(s): BIOST 2041 and EPIDEM 2110**

The purpose of this course is to provide a conceptual understanding of the field of environmental epidemiology and to provide the spatial statistical tools for geospatial analysis. The course will provide "hands on" training in software and tools for analysis of spatio-temporal variations in health and disease with respect to demographic, environmental, behavioral, socioeconomic, genetic, and infectious risk factors. Basic tutorials in Arc GIS (10.3) and Geoda freeware will be provided. There will be 7 assignments over the term and 1 final project. The course is meant for all interested master's and doctoral students who have taken an introduction to Biostatistics and Introduction to Epidemiology.

[Eff spring 2019, term 2194, new course.]

EPIDEM 2230 ADV TOPICS IN EPDMLGCL METHODS**Credit(s): 02.0****Prerequisite(s): EPIDEM 2180**

This course covers methods for obtaining and presenting data from existing sources. Laboratory sections will cover data management and statistical programming in the context of large public-use datasets and clinical databases. Students will be introduced to topics such as analysis of imaging data, longitudinal clinical registries, and multi-level modeling. Students will work in groups on a secondary analysis research project that will be presented in seminar format.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2250 SEMINAR IN EPIDEMIOLOGY**Credit(s): 01.0**

AREAS OF CURRENT EPIDEMIOLOGY INTEREST IN RESEARCH ARE PRESENTED. OFTEN A GENERAL THEME SUCH AS EPIDEMIOLOGY OF AGING, WOMEN'S HEALTH ISSUES, DISORDERS OF IMMUNITY, IS CHOSEN. ALL DEPARTMENTAL MAJORS ARE EXPECTED TO TAKE THIS COURSE.

EPIDEM 2260 EPIDEMIOLOGCL BASIS DISEA CTRL**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

The purpose of this course is to gain understanding of the principles underlying disease prevention and the ability to apply these principles to the design, implementation and evaluation of prevention interventions for chronic and infectious diseases. The first part of the course will be devoted to learning the principles of surveillance and risk assessment development, the second part to application of observational data and efficacy and effectiveness studies to populations. The third part will focus on the evaluation of prevention strategies for chronic and infectious disease. Throughout the course, there will be an emphasis on the interaction of biologic and clinical information with epidemiologic data and analysis.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2261 APLD EPID FIELD INVEST MTHS **Credit(s): 02.0**

Prerequisite(s): EPIDEM 2110 and EPIDEM 2180

This course introduces students to the methods of applied field epidemiology used in applied epidemiology settings such as federal, state, local and tribal government agencies. Upon completion of this course, students will be prepared to conduct urgent public health investigations and write reports for public consumption. This course will also introduce students to applied epidemiology topic areas and their respective analytic methods.

[New course for fall 2018, term 2191. For EPIDEM MPH, MS students.]

EPIDEM 2271 ADV TOPC CANCER EPID PREVN - 1 **Credit(s): 02.0**

Prerequisite(s): EPIDEM 2171 and EPIDEM 2180

THE OBJECTIVES OF THIS COURSE ARE TO FAMILIARIZE STUDENTS WITH CENTRAL TOPICS IN CANCER EPIDEMIOLOGY AND PREVENTION, INCLUDING CANCER BIOLOGY, RESEARCH METHODS, AND APPLIED CANCER CONTROL; PROVIDE STUDENTS WITH AN OPPORTUNITY TO DEVELOP AN IN-DEPTH UNDERSTANDING OF AN ETIOLOGY-SPECIFIC CANCER PROCESS; PROVIDES STUDENTS WITH HANDS-ON EXPERIENCE IN CONDUCTING CANCER EPIDEMIOLOGY AND PREVENTION RESEARCH; FAMILIARIZE STUDENTS WITH VARIOUS FACETS OF FUNDING, INCLUDING GRANT WRITING AND REVIEWING. NUTRITIONAL ETIOLOGY IS COVERED.

EPIDEM 2295 BIOCHMCL EPIDMLGCL ASPCT NUTRN **Credit(s): 02.0**

STUDENTS AND TEACHERS SELECT PUBLISHED MANUSCRIPTS TO EVALUATE AS A GROUP. TOPICS HAVE INCLUDED, BUT HAVE NOT BEEN LIMITED TO, ADIPOKINES, ANTIOXIDANTS, ARGININE AND NITRIC OXIDE, CYTOKINES, FRUCTOSE, METABOLISM, HORMONES, ISOFLAVONES, LIPOPROTEIN METABOLISM, POLYUNSATURATED FATTY ACIDS AND VITAMINS. BASIC BIOCHEMICAL CHARACTERISTICS OF EACH SPECIES ARE REVIEWED, NUTRITIONAL ASPECTS DISCUSSED AND POPULATION IMPLICATIONS ASSESSED WITH RESPECT TO CARDIOVASCULAR DISEASE, DIABETES, HIV INFECTION, AND OBESITY.

EPIDEM 2310 PSYCHIATRIC EPIDEMIOLOGY **Credit(s): 02.0**

Prerequisite(s): EPIDEM 2110

This course will review the classification systems and methodological issues in psychiatric epidemiology, the research methodologies used, and the distribution of specific psychiatric disorders.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2340 PEDIATRIC EPIDEMIOLOGY **Credit(s): 02.0**

Prerequisite(s): EPIDEM 2110

This course will focus on epidemiologic approaches to the study of disorders that occur during childhood and will provide an overview of common physical and psychiatric childhood disorders. In addition to describing the epidemiology of the disorders, consideration will be given to the risk factors, research methods, and methodological issues in pediatric epidemiology.

[Effective fall 2017, term 2181, revised course description.]

EPIDEM 2380 RES SEM ALCHOL AND PSYCHTRC EPID **Credit(s): 01.0**

THIS SEMINAR FOCUSES ON AREAS OF CURRENT RESEARCH IN PSYCHIATRIC EPIDEMIOLOGY AND ALCOHOL EPIDEMIOLOGY. FELLOWS IN THE PSYCHIATRIC EPIDEMIOLOGY TRAINING PROGRAM (DIRECTOR: GALE RICHARDSON, PH.D) AND ALCOHOL RESEARCH TRAINING PROGRAM (DIRECTOR: MARIE CORNELIUS, PH.D) ARE REQUIRED TO TAKE THIS COURSE.

EPIDEM 2400 PSYCHOSOCIAL FACTRS IN DISEASE **Credit(s): 02.0**

Prerequisite(s): EPIDEM 2110

This course focuses on psychosocial and behavioral factors that influence the development and course of physical disease. Some of these factors can be modified, so identification can lead to improved health. This course is directed towards students who want to learn about the most common psychosocial factors implicated in disease, how they are measured, psychometric issues, and how to incorporate them into studies of disease and physical health. Students will also learn how to analyze and evaluate the strengths and limitations of studies that include psychosocial factors.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2525 BIOCH, DIET& PHYSIO MTH EPID LAB**Credit(s): 02.0**

STUDENTS ARE INTRODUCED TO ANALYTICAL METHODS THAT SUPPORT EXERCISE AND NUTRITIONAL INITIATIVES. INITIALLY STUDENTS WILL ATTEND A LABORATORY SAFETY COURSE. BIOCHEMICAL ASSAYS WILL INCLUDE MEASUREMENTS OF ANTIOXIDANTS, FATTY ACIDS, HORMONES AND VITAMINS USING ELISA, GC-MS, HPLC, RIA, SPECTROPHOTOMETRIC AND TURBIDIMETRIC METHODS. SUB-CLINICAL TESTS WILL INVOLVE EVALUATION OF INTIMA-MEDIA THICKNESS AND PULSE-WAVE VELOCITY. DIETARY PROTOCOLS WILL ENCOMPASS BEHAVIORAL AND SURGICAL APPROACHES TO WEIGHT LOSS AND THE MAINTENANCE AND INTERPRETATION OF FOOD RECORDS. PHYSIOLOGICAL TECHNIQUES WILL TARGET EXERCISE INTERVENTIONS, THE DETERMINATION OF ENERGY EXPENDITURE, AND APPRAISALS OF FATIGUE, POWER AND STRENGTH. ANTHROPOMETRIC METHODS WILL INVOLVE BODPOD, BIOELECTRIC IMPEDANCE, DEXA, SKINFOLDS AND UNDERWATER WEIGHING. IMAGING STUDIES WILL EVALUATE BRAIN IMAGES IN RELATION TO DEMENTIA. RESULTS WILL BE DISCUSSED WITH RESPECT TO AGING, CVD, DIABETES, OBESITY AND OSTEOPOROSIS.

[Credit decrease, course description, and title changed effective Fall 2015 (2161). Previous title: Nutrition Assessment Laboratory]

EPIDEM 2560 NUTRITIONAL EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

THIS INTERACTIVE COURSE, INVOLVING LECTURES AND IN-CLASS LEARNING ACTIVITIES, PROVIDES STUDENTS WITH THE SKILLS AND KNOWLEDGE NECESSARY TO UNDERSTAND AND CRITICALLY EVALUATE THE NUTRITIONAL EPIDEMIOLOGY LITERATURE AND DESIGN STUDIES IN NUTRITIONAL EPIDEMIOLOGY. THE COURSE REVIEWS CURRENT METHODS OF ASSESSING NUTRITIONAL STATUS, WITH A FOCUS ON DIETARY ASSESSMENT, AS WELL AS BIOLOGICAL MARKERS, SUPPLEMENT USE, ANTHROPOMETRY, AND OBESITY. THE COURSE ADDRESSES THE APPLICATION OF EPIDEMIOLOGIC METHODS TO STUDIES OF NUTRITION AND DISEASE, HIGHLIGHTING METHODOLOGICAL ISSUES AND INTERPRETATION OF FINDINGS.

EPIDEM 2600 INTRO TO MOLECULAR EPIDEMIOLOGY**Credit(s): 03.0****Prerequisite(s): EPIDEM 2110**

To provide students with an introduction to the key concepts in genetics and molecular biology, and the diverse ways they are used to solve practical problems in the epidemiology of disease and risk identification. This course will deliver the working knowledge of genetics and molecular biology necessary for critical assessment of molecular epidemiological studies. It will provide suitable preparation for more advanced and specialized study in molecular epidemiology. The student will develop familiarity with the ways molecular epidemiology is used to determine susceptibility to disease and response to interventions. The main topics covered are: genetic susceptibility, the use of biomarkers, and molecular association studies.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2601 MOLECULAR EPIDEMIOLOGY TOOLS & TECHNIQUES**Credit(s): 03.0****Prerequisite(s): EPIDEM 2600 and EPIDEM 2180 and EPIDEM 2185**

There is a steady stream of new methods and technologies entering the biomedical sciences that can be used to generate high-quality, quantitative data on the molecular and biochemical aspects of health and disease. There is tremendous value in applying these methods in epidemiologic studies to interrogate the molecular underpinnings of associations within populations, generate hypotheses on the mechanisms involved, to monitor the effects of interventions and to increase confidence in causal inferences. This course will be an opportunity for students to be exposed to methods for measuring the biologic processes that are relevant to DNA variation in populations, and to exposure effects that impact RNA and protein (and other molecule) expression. This course will go beyond the standard level of awareness of how to receive and analyze data from a laboratory. We will engage students in rigorous thought on how to pose questions on the underlying biology, conduct biomarker selection, design assays, and analyze and interpret data. We will spend ~50% of the time exposing students to hands-on experimentation at the laboratory bench. While, we will discuss 'omics' and high-dimensional methods in lectures, the hands-on work will be limited to single molecule analyses.

[Effective fall 2017, term 2181, course was revised: title, component type, lab added, credit increase, enrollment requirements.]

When enrolling in EPIDEM 2601 you will also enroll in the required Lab.

EPIDEM 2601 LAB - MOLECULAR EPIDEMIOLOGY TOOLS & TECHNIQUES - LAB**Credit(s): 00.0****Prerequisite(s): EPIDEM 2600 and EPIDEM 2180 and EPIDEM 2185**

Those methods in which knowledge is acquired and/or applied in a learning activity that is a controlled experiment or an artificial construct of reality; for zero credit.

[Effective fall 2017, term 2181, course was revised: title, component type, lab added, credit increase, enrollment requirements.] When enrolling in EPIDEM 2601 you will also enroll in the LAB offering.

EPIDEM 2620 ADV TOPCS IN MOLEC EPIDEM**Credit(s): 01.0****Prerequisite(s): BIOST 2041 and BIOST 2042 and EPIDEM 2110 and EPIDEM 2180**

This course will advance the learning of students interested in molecular epidemiology by teaching practical aspects of measuring, quantifying and modeling levels of RNA and protein in human biological specimens (blood, tissue, etc). Some topics will include: selecting and validating biomarkers of RNA and protein for application in epidemiologic study design, candidate molecule vs. omics (high-dimensional) approaches, increasing support for associations through experimentation using human in vitro models, basic know-how in the design and execution of bioassays, and statistical issues in biomarker data analysis. Students will observe the work of a molecular epidemiology laboratory.

[New course for fall 2018, term 2191.]

EPIDEM 2640 INJURY PREVENTION AND CONTROL**Credit(s): 02.0**

Injuries and violence are leading causes of morbidity and mortality in the United States and globally. This course is directed towards individuals with an interest in learning more about this burden and the current approaches being taken to reduce it. It provides an example of how the disciplines of public health can be used to study, understand, and address a significant public health issue. The course will provide an overview of the basic principles and practice underlying injury prevention and control. Lectures will identify the burden underlying major categories of unintentional and intentional injuries and review the multi-disciplinary approaches being used to reduce injuries and violence, in general, and with respect to specific injury and violence issues. In class discussion and problems will be utilized to enhance understanding of approaches to prevention.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2670 INJURY EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

This course is designed to provide an introduction to and understanding of the epidemiology of injuries. The class will review the fundamentals underlying injury data and the methods used in injury research studies. Research in major injury topics; motor vehicle crash, violence, sports injury, and other topics will be discussed in depth. Through instruction and practice with data, participants will become familiar with the importance of injury as a public health problem, the strengths and weaknesses of injury data sources and injury surveillance systems, and injury research methods.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2710 EPIDEMIOLOGY OF WOMEN'S HEALTH**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and (EPIDEM 2712 or PUBHLT 2015)**

This course presents an introduction to the influences of health and disease among women. It reviews epidemiologic approaches to understanding the basic etiology and primary prevention of diseases unique to or more common among women. There is a strong focus on life course approaches to understanding health and disease, including methods, study design and analytics appropriate for studies across the lifespan, from in utero to old age. Course includes lectures, seminars, and discussion.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2720 REPRODUCTIVE EPIDEMIOLOGY**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and BIOST 2011 or BIOST 2041**

THIS COURSE PRESENTS MALE AND FEMALE REPRODUCTIVE ANATOMY AND PHYSIOLOGY, AND FETAL DEVELOPMENT, AS EACH IS SUSCEPTIBLE TO ADVERSE ENVIRONMENTAL CONSEQUENCES. IT DISCUSSES IN DETAIL A CRITICAL APPROACH TO EPIDEMIOLOGIC INVESTIGATION OF POTENTIAL REPRODUCTIVE TOXICANTS. CASE STUDIES OF SPECIFIC TOXICANTS ARE DISCUSSED.

EPIDEM 2721 RSRCH SEM REPRDCTV EPIDEM**Credit(s): 01.0**

THIS SEMINAR FOCUSES ON AREAS OF CURRENT RESEARCH IN REPRODUCTIVE, PERINATAL, AND PEDIATRIC EPIDEMIOLOGY. FELLOWS IN THE REPRODUCTIVE, PERINATAL, AND PEDIATRIC TRAINING PROGRAM ARE REQUIRED TO TAKE THIS COURSE, ALTHOUGH IT IS OPEN TO ANY INTERESTED STUDENTS.

EPIDEM 2725 REPRDCTV DVLP MODL ORGNSM HUMN**Credit(s): 02.0****Prerequisite(s): PUBHLT 2015 or EPIDEM 2004**

THIS COURSE FOCUSES ON THE MOLECULAR ASPECTS OF THE TRANSITION FROM GAMETE TO A REPRODUCTIVE ORGANISM. THE COURSE PROGRESSES THROUGH THE BUILDING OF GERM CELLS, FERTILIZATION AND STEM CELL PARTICIPATION TO SEX DETERMINATION, GONAD MORPHOGENESIS, PUBERTY, MENOPAUSE AND PREGNANCY. THIS COURSE HIGHLIGHTS BOTH HUMAN AND MODEL ORGANISMS TO BRING TOGETHER DIVERSE ASPECTS OF THE CELL AND DEVELOPMENTAL BIOLOGY OF REPRODUCTIVE TISSUES AND THEIR IMPACT ON DISEASE PATHOLOGY.

EPIDEM 2850 PHARMACOEPIDEMOLOGY**Credit(s): 02.0**

The purpose of this course is to provide an introduction to the field of pharmacoepidemiology, which uses epidemiologic methods to examine the benefits or risk of medications in the population. This course will: explain what pharmacoepidemiology is and what types of study designs are used within this methodology, discuss the roles that pharmacoepidemiology studies have regarding drug use and health outcomes; describe the threats to validity that are possible in pharmacoepidemiologic studies and the variety of solutions available to avert or control for these threats. This information will prepare students to both interpret and critique, in writing and through presentations, studies from the pharmacoepidemiology literature.

[Effective spring 2017, term 2174, revised course description; eff term 2184 title change.]

EPIDEM 2900 ADVANCED EPIDEMIOLOGY OF AGING**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and EPIDEM 2981 and BOST 2011 or BOST 2041**

This is an advanced course targeted towards Epidemiology PhD students. The purpose of this course is to understand in depth the current epidemiologic research findings regarding common health conditions and geriatric syndromes in the aging population. The course will focus on the common age related processes and chronic health conditions that contribute to disability and frailty and on enhancing successful aging and preventing disability. Advanced research methods will be reviewed as part of each class.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2920 GRANT WRITING**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110 and EPIDEM 2180 and EPIDEM 2185 and EPIDEM 2183**

During this course, students will develop a grant proposal on a research topic of their choice. The proposal will be written in the format of the National Institutes of Health (NIH) National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31) grant application. The application will include specific aims and a research plan that includes significance, innovation, and approach. The proposal will also include a research training plan as required by the NIH. Students will also participate in a mock study section (grant review). Students are encouraged to use this opportunity to develop an application for submission to the NIH for support of their dissertation work.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2950 EPIDEMIOLOGY OF AGING WORKSHOP**Credit(s): 01.0**

The workshops are designed as practical professional skill development to supplement to the additional coursework for the Epidemiology of Aging trainees and students. The workshop will include sessions on: presentations by the students from their research, journal article reviews, longitudinal analyses techniques, and professional skills sessions. The presentation sessions provide an opportunity for students to present and refine their interim research and data analyses by obtaining feedback from peers, faculty and mentors on their work in progress. Journal article review sessions will provide an opportunity for students to identify and share current articles relevant to the epidemiology of aging and develop proficiency in the critical review of scientific literature. Emphasis will be placed on understanding emerging and novel methods in the field, particularly longitudinal statistical analyses techniques (e.g. handling missing data longitudinally; interpreting changes in slopes over time; joint modeling). A faculty member will help student leaders select articles (distributed before the meeting) and will work with students to encourage questions and discussion among the group. Professional skill sessions will vary by semester and cover topics such as post-doctoral career development, grant and professional medical writing, and longitudinal data analysis.

[Effective spring 2017, term 2174, revised course description.]

EPIDEM 2980 BIOLOGY & PHYSIOLOGY OF AGING**Credit(s): 01.0****Prerequisite(s): EPIDEM 2004 or EPIDEM 2712 or equivalent coursework**

This course introduces students to the aging process as a foundation for research in the epidemiology of aging. Some topics for the course will include: Overview of aging physiology, molecular and biological processes of aging, model systems of aging and study designs that are currently relevant to human population research.

[Effective summer 2017, term 2177, revised course description.]

EPIDEM 2981 EPIDEMIOLOGY OF AGING-METHODS**Credit(s): 02.0****Prerequisite(s): EPIDEM 2110**

This course will introduce the methodological aspects of epidemiologic research in the field of aging and to critically evaluate research in older adults. The course will focus on: demography, study design, sampling, recruitment, retention, measurement of key variables and special populations. Students will write a critical review of a published article and comment on proposed future directions for epidemiologic studies addressing these questions in older populations. Throughout the course, a Problem Solving Learning Method will be applied by prompting the students to solve pragmatic issues. Examples include: How to measure a specific outcome? What type of chronic health conditions may be related to the research question? How to operationalize specific measures of interest (e.g.: how to create a composite score for co-morbidity assessment?). The course has been formulated to provide the students with the "building blocks" of the epidemiological study of aging. By the end of the course, the students will be able to critically evaluate various components of a study to further address the research questions in aging populations.
[Effective fall 2017, term 2181, revised course description.]

EPIDEM 3100 RESEARCH AND DISSERTATION PHD**Credit(s): 01.0 to 15.0**RESEARCH AND DISSERTATION FOR THE DOCTORAL DEGREE.

FTDR 3999 FULL-TIME DISSERTATION RESEARCH**Credit(s): 00.0**

DOCTORAL CANDIDATES WHO HAVE COMPLETED ALL CREDIT REQUIREMENTS FOR THE DEGREE, INCLUDING ANY MINIMUM DISSERTATION REQUIREMENTS, AND ARE WORKING FULL-TIME ON THEIR DISSERTATIONS MAY REGISTER FOR THIS COURSE. WHILE THE COURSE CARRIES NO CREDITS AND NO GRADE, STUDENTS WHO ENROLL IN "FULL-TIME DISSERTATION STUDY" ARE CONSIDERED BY THE UNIVERSITY TO HAVE FULL-TIME REGISTRATION STATUS.
