GPHP Course Descriptions

MBIO 0600. GRADUATE RESEARCH SEMINAR I. 1st Semester and Summer. Lect. 1, Lab 0, 1 credit. This course includes practical examples of proper conduct of research, issues with copyright violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentations and/or reports are required.

MSPH 0600. GRADUATE RESEARCH SEMINAR I. 1st Semester and Summer. Lect. 2, Lab 0, 2 credit. This course includes practical examples of proper conduct of research, issues with copyright violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentations and/or reports are required.

MBIO 0601. GRADUATE RESEARCH SEMINAR II. This course is a continuation of MBIO 601, and includes a review of current research topics. The course will teach the fundamentals of how to give a good oral presentation to an audience of peers. It will also teach fundamentals and advanced techniques of PowerPoint and how to use this program to your advantage when giving a presentation

MSPH 0601. GRADUATE RESEARCH SEMINAR II. 2nd Semester and Summer. Lect. 2, Lab. 0, 3 credit. This course is a continuation of MBIO 600 and includes a review of current research topics. Each primary faculty member has a section assigned for this course and may choose to highlight topics of research interest. Oral presentations are required.

MBIO 0601.05/MSPH 0632 Public Health Leadership & Emergency Management. 1st Semester Lect. 2, Lab. 0, 2 credits. Public Health Leadership, as a pillar of public health, is a process focused on advancing the core functions of public health. It is the activity of guiding a group of people or organizations by establishing a clear vision; sharing that vision with others so that they will follow willingly; providing the information, knowledge, and methods to realize that vision; and coordinating and balancing the conflicting interests of all stakeholders. This course introduces students to the theory, methods, and body of knowledge of public health leadership, using an integrated approach in exposure to accepted leadership models while engaging students to challenge current paradigms by generating original approaches to common public health concerns. It discusses the core functions and essential services of public health and how leadership is a critical aspect of each. Designed therefore for students in all fields of public health, its primary objective is to teach the basic principles and applications of public health leadership.

MBIO 0601.05/MSPH 0631 Health Education & Communication. 1st Semester Lect. 2, Lab. 0, 2 credits. This course introduces the student to the discipline and profession of health education. Students will examine the concepts of health and wellness, the determinants of health behavior, national health status, the history of health education and health promotion. The student will recognize health education as an important foundation for population-based health care and learn culturally competent strategies for communicating health messages in diverse settings.

MBIO 0601.05/MSPH 0630 Program Planning & Evaluation. 1st Semester Lect. 2 Lab 0, 2 credits. This course introduces the student to the use of scientific data or program development and evaluation. Students will examine the concepts of community engagement, program development, the appropriate evaluation tools for target programs, use of effective management, and planning in the evaluation process. The student will recognize program development and program evaluation as an important tool for addressing health inequities.

MSPH 0614. PRINCIPLES OF EPIDEMIOLOGY. 1st Semester, Lect. 2, Lab. 1, 3 credits. In this course, basic epidemiologic principles and methods as the pillars of public health will be emphasized. Test systems will be used in the prevention and control of diseases in populations. The full range of disease occurrence, including genetic and environmental causes for both infectious and non-infectious diseases will be covered. Students will be introduced to the theory, methods and body of knowledge of epidemiology and its basic principles and applications.

MSPH 0626. PUBLIC HEALTH. 2nd Semester, Lect. 2, Lab. 1, 3 credits. This course provides students with basic and current insights into food safety, foodborne illnesses, and zoonotic diseases, and basic operation of municipal drinking and wastewater treatment plants. Students will also be exposed to the emerging exotic diseases of animals and the Veterinary Information Network with in-class discussions, gaining exposure also to real-life public health issues via interaction with state and federal public health professionals, while learning to address public health-related community issues through classroom discussion.

MBIO 0518. FOOD SAFETY AND QUALITY. 2nd Semester and Summer, Lect. 3, Lab.0, 3 credits. This course introduces the historic and contemporary complex issues of food of animal origin. It addresses food security; the organizational structure and function of the food regulatory systems (inclusive of the application of the hazard analysis critical control points (HACCP) methodology), and the International Health Regulations (IHR); and food quality from production to consumption. It will consider some selective aspects of real-life public health issues that affect or are affected by cultural values and practices and their implications for the design and implementation of

public health policies and programs. It provides for the application of systems thinking tools to important public health concerns in the food industry and the important dynamics of interaction among local, state, and federal public health professionals, as well as personnel from the private sector. Guest lecturers from a variety of disciplines will complement classroom discussion, literature reviews, and assignments.

MBIO 0633. RISK COMMUNICATION. 2nd Semester, Lect.2, Lab.0, 2 credits. This course is an interactive seminar course in which there will be shared exchange of information and opinions. Discussions will help students appreciate and reach decision-making processes and learn how to take action inclusive of the development of policies regarding public health concerns and the risks that they pose. The course would discover ways in which to manage and control important health factors, environmental risks, and the art of messaging to understand, avert or prevent risks, and to provide safety measures for good health. There are both theoretical and practical applications in this course, as well as a strong focus on addressing the source of information that triggers communication of risks. Students will learn of the importance of understanding the target audience; the analysis of the problem at hand; the messaging that requires attention; the media channels used in the process and media engagement.

MBIO 0660-01. BIOMEDICAL STATISTICS. 1st Semester. Lect. 3, Lab. 0, 3 credits. An introduction to descriptive and inferential statistics for the Public Health sciences. Among the topics covered are descriptive and inferential statistics using analytical techniques which include regression and correlation techniques. The basic concepts of statistical analysis are taught using discussion and examples. Using these concepts, the course proceeds to demonstrate how they are applied to data analysis in the Public Health Sciences. Collection and analysis of unique Public Health data will take place with the students collecting data in a real-world situation.

MBIO 0660-02. BIOMEDICAL STATISTICS. 2nd Semester. Lect. 1, Lab. 1, 2 credits

A course on the practical application of descriptive and inferential statistics for the Public Health sciences. Among the topics covered are the practical application of descriptive and inferential statistics taught in section one, together with further analytical techniques taught in this course. Students are also instructed in the use of statistical software packages used in public health with respect to the various analytical techniques taught. The concepts of statistical analysis are taught using discussion and examples while the software packages are taught using public health related data sets. Using these concepts, the course proceeds to demonstrate how they are applied to data analysis in the Public Health Sciences. Collection and analysis of unique Public Health data will take place with the students collecting data in a real-world situation.

MBIO 0661. ADVANCED EPIDEMIOLOGY. 2nd Semester (alternate years). Lect. 3, Lab. 0, 3 credits. This course will build upon the introductory course in Epidemiology (MBIO 0614). It will emphasize the analysis (both qualitative and quantitative) of the dynamics of health/ill health processes and interactions in populations, systematically. Retrospective and prospective studies, the use of epidemiologic models (both static and dynamic) and systems analysis techniques and other problem-solving tools in analytical epidemiology will be presented and applied to selected cases. Independent study and developing a research paper on a selected epidemiologic topic will be encouraged.

IBS 0601: SPHERES of ETHICS and PUBLIC HEALTH. 2nd Semester. Lect. 3, Lab. 0, 3 credits. This course will provide a philosophically grounded introduction to ethics. It will discuss ethics evolution from theology and philosophy to ethics and includes, but is not limited to: morality, virtual ethics, bioethics, and public health ethics. Ethical approaches to social justice will provide a unifying framework for examining public health, racial and ethnic health issues, health and health care disparities. The course introduces students to programmatic and research strategies for shaping individual, group, community, public health and public policy.

MSPH-0600. ENVIRONMENTAL HEALTH SCIENCES, 2nd Semester. Lect. 3, Lab. 0, 3 credits. This core course focuses on techniques on preventive health practices relative to the control of air quality, water, and consumer products, with an emphasis on environmental factors, basic public health concepts on disease causation and prevention, toxicology, especially carcinogenesis, and in infectious diseases and their implications on population growth will be introduced. This course will also focus on administrative, policy and management issues that affect the environmental health of communities with emphasis on rural and other underserved communities. The course will demonstrate the importance of environmental health issues across the health continuum highlighting the 3P's (Pollution, Population and Poverty). The course will utilize case studies to analyze planning, management, and remediation of environmental hazards. The student will also focus on points of advocacy for environmental health awareness, policy change, and legal intervention to decrease environmental inequities. Permission of Instructor.

MSPH-0605. INTRODUCTION TO HEALTH ADMINISTRATION, POLICY AND LAW, 1st Semester. Lect. 3, Lab. 0, 3 credits. This core course focuses on administrative, policy and management issues that affect health practitioners and practices, focusing on access, cost and quality, using a multidisciplinary approach to healthcare structure, process and outcomes. Emphasis will be placed on health care system organizations, health care financing, national health insurance, long-term care, the role of government

at the local, state and national levels in the US health care systems, and the role of government in encouraging quality care (Healthy People 2020). Permission of Instructor.

MSPH-0610. PSYCHOSOCIAL DETERMINANTS OF HEALTH, 1st Semester. Lect. 3, Lab. 0, 3 credits. This course is designed as a foundation course in the application of social and behavioral science perspectives to public health. The format is a survey of basic concepts, analytic frameworks, and intervention strategies that can be applied to current public health issues. Basic principles from psychology, sociology, anthropology and other social science disciplines are analyzed in relation to the causes, consequences and control measures for public health problems.

MSPH-0615. HEALTH DISPARITIES/INEQUITIES, 1st Semester. Lect. 3, Lab. 0, 3 credits. This cross-disciplinary course introduces students to issues on racial and ethnic health disparities, highlighting inequalities among African American and other minority populations, and examining the causes and ways to reduce such health disparities in the US, by specifically looking at approaches at the individual, community and policy levels. The course provides an opportunity for students to acquire knowledge of the healthcare system, focusing on information dissemination, budget creation and financial management, inventory and progress monitoring relative to public involvement in health care issues, practices and policy making. Permission of Instructor.

MSPH-0620. EPIDEMIOLOGY OF INFECTIOUS DISEASES, 1st Semester. Lect. 3, Lab. 0, 3 credits. This core course will introduce the study of the epidemiology of infectious diseases of national and international importance. The course will emphasize methods used in outbreak investigation and molecular epidemiology, concepts in disease transmission and dynamics, epidemiologic study design, and disease surveillance. Course lectures provide general topics related to infectious disease epidemiology, with several specific diseases or disease processes examined in detail as examples for each major mode of transmission. Prerequisites: MBIO 0614 or the instructor's permission.

MSPH-0625. MULTIVARIATE METHODS, 1st Semester. Lect. 3, Lab. 0, 3 credits. This course provides students with statistical procedures for analyzing multivariate outcome data in health-related studies teaching logistic regression, Mantel-Haenszel procedures for 2x2 contingency tables and for stratified ordinal data; proportional odds model extension of logistic regression for ordinal data; Poisson regression, conditional logistic regression; and computing procedures for implementing methods. The course provides an opportunity for students to apply analysis of categorical data methods in

epidemiological and clinical studies on specific health problems. Prerequisites: MBIO 0614, or biomedical statistics and permission of Instructor.

MSPH-0700. PROPOSAL, WRITING AND GRANT MANAGEMENT, 1st and 2nd Semester. Lect. 2, Lab. 0, 2 credits. Understand the requirements for writing a professional grant proposal using APA style. Understand the correct use of English grammar when writing a professional document. Understand the requirements and management after receiving a professional research grant. Being able to research different funding sources.
Permission of Instructor.

PATH/MBIO 0669. RISK ANALYSIS & MODELING: Principles and Methods, 2nd Semester. Lect. 3, Lab. 0, 3 credits. Risk analysis is critical in International Agreements such as the World Trade Organization (WTO), which now require Sanitary and Phytosanitary (SPS) regulations that are based on scientific, quantitative risk assessments. The risk analysis course at Tuskegee University will emphasize public health related risk analysis and SPS issues and will present an integrated approach to risk analysis composed of risk assessment, risk management and risk communication. It will rely upon a detailed analytic understanding of the epidemiology of a population under study and expertise in mathematical/statistical and computer modelling methods. The course will emphasize both stochastic (probabilistic) and deterministic modelling undergirded by sound epidemiologic concepts of population dynamics. Rigorous examination of risk agent's transmission pathways and multiple determinants that affect these interactions will be evaluated and quantified with emphasis on probability distributions. Both qualitative and quantitative risk analysis methods will be examined. The focus of this course will be Quantitative risk analysis (QRA) with emphasis on scenario analysis (scenario trees or risk pathway analysis), including probabilistic methods (used for quantification of risk and modeling of identified risks) and how to make decisions from those models. Monte Carlo simulation (which offers a powerful and precise method for dealing with the uncertainty and variability) will be explored with tools such as @RISK, Microsoft Excel and other risk analysis and modeling software as well as statistical/mathematical programs.