

Biohazardous Threat Agents & Emerging Infectious Diseases (BHTA)

BHTA 5650 Microbiome Seminar Series 1 Credit

Microbiomics touches upon a broad range of disciplines, including microbiology, immunology, biochemistry, and bioinformatics. This new discipline can further elucidate our understanding of the complex interactions among hosts, the immune system, and health at every stage of life. This seminar series will bring leading experts in the field of microbiome and introduce students to the broad range of current research such as human immune systems, wellness and aging, environmental health, neurological functions, and population health. The course will consist of lectures by instructors and guest speakers. The course will touch upon the role of next-generation microbial sequencing, including indications for, and how to interpret the results of the taxonomic and metagenomic analyses as an introduction to the advanced course on microbiomics and health.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

BHTA 6514 Parasitology Tropical Med 2 Credits

This graduate seminar combines presentations by experts in microbiology and life science, international policy, and biotechnology. In this course, students will gain an in-depth understanding of the parasites of greatest concern to human. They will explore the diversity of parasites, including protozoa, helminths, and ectoparasites, and their impacts on human populations, with particular attention to zoonoses and public health in intertropical zone and the risk of global spread. They will learn the strategies to identify, respond and prevent parasitic infections including treatment, vaccination, and habitat management to limit transmission. Finally, students will become familiar with current challenges such as parasite resistance and the influence of climate change on parasite distribution, enabling them to effectively contribute to the fight against these infections in a global health context. This program is divided into two main modules, each detailing the most relevant parasites for each category, transmission mechanisms, clinical manifestations, pathology, diagnostic and prevention methods, and control strategies. The first module on Human Parasitology focuses on parasites with a high impact on human health, particularly in endemic areas. It includes infectious agents with public health implications due to their prevalence, resistance to treatments, or debilitating effects. For each parasitic human infection, laboratory, diagnostic, medical countermeasures, prevention, and control will be reviewed. The second module will focus on the Impact on human health of Parasitic Zoonosis of domestic and wild animals' origins. Students will learn about the risk posed by zoonotic diseases, the natural cycle of parasites and transmission from animals to humans, and its implications for public and veterinary health. This course uses a combination of lecture approaches, discussions, and student engagement. Students are expected to read the material provided and to be prepared to participate in all discussions. This course is open to all Ph.D. and M.S. students in the Department of Microbiology and Immunology. This one-credit class meets every week of the semester. Seminars are held during the fall semester, with lectures focusing on concepts of border biohazards.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6515 Microbio of Biologcl Thrt Agts 3 Credits

This course will cover NIH bioterrorism agents (categories A-C), which can be utilized as biological weapons. The microbiology of these agents will focus on structure, pathology, and virulence factors. The immune response to these agents will be presented. Viral agents will include Variola and hemorrhagic fevers (Ebola and Lassa). Bacterial agents will include B. anthracis, Yersinia pestis (plague), and Francisella tularensis (tularemia). Emerging infectious disease threats such as Nipah, Hantavirus, and SARS will also be covered.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6516 Biol Rad Safety 2 Credits

This course will cover the biological safety levels (BSL) for containment working with biological agents - both recombinant DNA and emerging infectious diseases. Radiological safety - will discuss the issues of dirty bombs, containment, and health issues associated with radioactive materials that bioterrorists might employ.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 6517 Bioterrorism 3 Credits

This course will examine the use of biological weapons. Terrorism in its modern form will be discussed as well as which biological agents are most likely to be used, their techniques for deployment, and their prevention and control. Specific disease agents to be covered will include anthrax, plague, botulism, smallpox, tularemia, and viral hemorrhagic fevers.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6520 Agroterrorism: Anml/Plant/Home 3 Credits

This course will cover historical and contemporary aspects of intentional introduction of microbial and chemical agents in the food chain with specific emphasis on animal viruses like foot-and-mouth disease, mad cow, Rift Valley fever, hog cholera, highly pathogenic avian influenza West Nile, and New Castle Disease. Plant pathogens, such as soy bean rust will be covered. Moreover animal and plant agent lists will be discussed to include human cross-over agents. Discussions relevant to first responders will be detailed.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the following programs:

- MS-BHTA
- MS-BHTA-SM
- MS-BSPA
- MS-BSPA-SM
- MS-MICB
- MS-MICB-SM
- PHD-MICB
- PHD-MICB-SM

Enrollment is limited to Graduate level students.

BHTA 6523 Quantitative Mthds for Sci Pol 3 Credits

This course would cover the basics of data collection/selection, database setup, quantitative analysis basics using Excel and R, and data visualization in Tableau to give students a broad base for policy analysis and development. Students will have the opportunity to work on a project of their choosing and can use the classwork to develop a proposal for their capstone. This course covers distribution, bayesian analysis, regression and multiple regression, chi-square, T-test, ANOVA, Pearson correlation, and more.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6524 Emerging/Re-emerging Inf Disea 2 Credits

This course will provide a multidisciplinary introduction to emerging and re-emerging infectious diseases. The course will begin with an introduction to a set of core definitions including; factors of emergence and re-emergence and approaches to detection and prevention. The course will then review and analyze the evolving response structures at the Global level with a focus on international frameworks for addressing biological threats in humans and animals. There will be a special focus on the United States Government (USG) response apparatus. Moving into the second component of the course, we will review the basics of pathogenesis, the immunologic response and how these relate to analysis of epidemiologic curves. The third component will provide a high-level overview of clinical trials, product development, and how these intersect during disease outbreak emergencies. To complete the course, we will review specific case studies, including several cases designed to explore comparing differences in disease recognition and response. At the completion of the course, students will understand the multidisciplinary dimensions that contribute to both the emergence and the mitigation of emerging and re-emerging infectious diseases. This course will feature lectures from Rebecca Kats, PhD, MPH (Associate Professor, Department of Microbiology and Immunology) and Guest Lecturers..

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 6525 Homeland Security 3 Credits

This course will examine threats to the US homeland, how they might evolve over the next ten years, and the consequent implications for technology and homeland security. The course will examine the motivations of non-state actors to threaten the US homeland, how those actors might use technology and exploit vulnerabilities to attack the US, and the role of technology in countering these threats and securing the homeland.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6526 The Chemistry of War 2 Credits

This class will provide a foundational knowledge of chemical warfare agents, to include the chemical structures, synthesis routes, physiological effects, delivery systems, and scenarios for use. We will focus on why particular chemical agents and delivery systems are more or less attractive to various actors based on available resources, expertise, and intended effects. The class will review historical and recent case studies of chemical warfare use and international response, looking at the impact of these events and responses through the lens of the adversary, third parties, and western governments. This course is intended to push students to think critically about how chemical attacks have broken norms against weapons of mass destruction and how these developments shape the outlook for counterproliferation of chemical weapons.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 6551 Biohaz Threat Agnts/Emer Inf D 2 Credits

This seminar will present a variety of nationally and globally recognized experts in the broad field of biohazardous threat agents and emerging infectious diseases. Individual topics will vary depending on the expertise of each speaker. Previous lectures have included: D.A. Henderson: "From global smallpox eradication to biodefense" David Kaplan: "Aum Shinrikyo" Jeffrey Taubenberger: "Recovering the 1918 flu virus" Don Burke: "Tracking new retroviruses in Central Africa" Chad Roy: "Threat of aerosolized agents"

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6565 Microbiome Seminar Series 1 Credit

Microbiomics touches upon a broad range of disciplines, including microbiology, immunology, biochemistry, and bioinformatics. This new discipline can further elucidate our understanding of the complex interactions among hosts, the immune system, and health at every stage of life. This seminar series will bring leading experts in the field of microbiome and introduce students to the broad range of current research such as human immune systems, wellness and aging, environmental health, neurological functions, and population health. The course will consist of lectures by instructors and guest speakers. The course will touch upon the role of next-generation microbial sequencing, including indications for, and how to interpret the results of the taxonomic and metagenomic analyses as an introduction to the advanced course on microbiomics and health.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6570 Microbiome Health: Clin Apps 2 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Biohaz Thrt Ag Emrg Inf Dis, Biohaz Thrt Ag Emrg Inf Dis, Biohaz Thrt Ag Emrg Inf Dis, Biohaz Thrt Ag Emrg Inf Dis, Microbiology Immunology, Microbiology Immunology, Microbiology Immunology, Microbiology Immunology, Systems Medicine, Systems Medicine, Systems Medicine or Systems Medicine.

Enrollment is limited to Graduate level students.

BHTA 6577 Defnse Threat Reductn Initiatv 2 Credits

This elective course is focused on exploring the various aspects of how the US government, specifically the Department of Defense, works to safeguard America and its allies from weapons of mass destruction (chemical, biological, radiological, nuclear, and high yield explosives) by providing capabilities to reduce, eliminate, and counter the threat, and to mitigate its effects. An initial analysis of the current and potential nuclear/radiological, biological and chemical threat will set the stage; and the medical effects of these weapons will be briefly reviewed. Various threat reduction strategies and their medical consequences including the Chemical Weapons Convention and the Strategic Arms Reduction Treaty will be surveyed. Moreover, elimination efforts such as the Chemical Demilitarization Program will be covered. Public health and medical consequences related to the enormous task of mitigating the effects of a WMD will be covered. The course will consist primarily of lecture/discussion format with readings designed to enhance student knowledge and provoke discussion; and subject matter experts from various government agencies will present their respective roles in this realm.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the following programs:

- MS-BHTA
- MS-BHTA-SM
- MS-BSPA
- MS-BSPA-SM
- MS-MICB
- MS-MICB-SM
- PHD-MICB
- PHD-MICB-SM

Enrollment is limited to Graduate level students.

BHTA 6586 Introduction to Health Systems 2 Credits

This course introduces the idea of health systems and various models of health systems around the world. It reviews the underlying discourse around understanding health systems, health systems performance, and complexities in health systems. We start with exploring the ideational questions of conceptualizing health and health systems through a historic analysis of the evolution of various health systems frameworks and contributions of various disciplines to the knowledge of the meaning, performance, and complexity of health systems. We then engage with different types of health systems stressing models of health care financing and provisioning around the world through country-specific case studies. The course will engage with the current issues around the performance of the health systems around the world.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6589 Environmental Health Policy 2 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6590 One Health and Health Security 2 Credits

This course will provide a comprehensive view of animal health as it relates to the concept of "One Health" for the betterment of an increasingly global society. Through lecture, students will be presented with material related to specific zoonotic diseases, such as Avian Influenza, Rabies, MERS-coV, Nipah, and West Nile, and the lessons learned through the emergence and re-emergence of these diseases in animals. Course participants will also be encouraged to follow mass media current events on relevant subject matter as a means to stimulate discussion. Other topics explored will include: the cultural and socioeconomic factors influencing human-animal interaction, the increasing interface with wild and domestic animals, animals as sentinels of human disease, and the impact of urban agriculture. The breadth of knowledge pertaining to animal health gained in this course should allow the students to apply a sharp analytical insight to very complex "Global One Health" issues.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6603 Sci/Tech in Global Arena 4 Credits

N/a

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6606 Science Policy for Scientists 3 Credits

This interdisciplinary course will provide an introduction to contemporary science policy in theory and practice. This 3-credit course meets every Monday from 1-3:30pm. The course will review the roles of U.S. government executive, legislative, and judicial branch entities that make and shape national science policies; the evolution of science advocacy; and the impact of Federal policies on funding of research activities, science-industry interactions, and international collaborations. Students will gain a multi-faceted understanding of how science and scientists inform the development of policy frameworks (science for policy), and the ways in which policy decisions influence the environment for research and development (policy for science).

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6700 AI: Hlth, Defense, Ethics Pol 2 Credits

This course is taught with lectures 50% and discussions 50%. The first class is to introduce a specific AI technology by an experts and the second class we designate for discussion how to regulate the specific technology. The course is taught by faculty members with interdisciplinary backgrounds in AI, health care, defense, ethics and biomedical science policy with decades of experiences. Both instructors have advised at a US federal agency, teamed with a international expert in biomedical technology and healthcare economy.

In 2023, AI faced a new paradigm shift that brought much concern to AI technologies, especially due to concerns of the use of the chat GPT in educational system. However, in the health care and health science fields in general, AI has indeed revolutionized patients care to scientific research. In this course, we hope students to learn that AI in biomedical fields and defense capabilities, while we will discuss how to fine tune policies considering ethical concerns and racial and other discriminations. Due to the AI, medical imaging has accelerated the diagnostic processes for discovering hidden cancers. The drug-designing process has become much more rapid and enhanced with AI. As we need to process big data in biomedical sciences, we cannot manage without the help of AI tools. Chimeric antigen receptor (CAR) T-cell therapy for cancers is a revolutionary approach to targeted personalized immunotherapy for cancer patients. In spite of many advances through AI technologies, the accuracy of AI work is still not reached 100%, and hidden biases in AI technologies. Especially young generations need to understand the inside of the "black box" before fully take advantage of the technologies. In this course, while introducing a variety of AI technologies, we will have through discussion on ethics, policy and concerns of regulating this technologies to fully utilize their capacities.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6705 Brain Initiative 2 Credits

The original brain initiative concept “aims to develop new high-resolution tools and data science approaches to precisely quantify behaviors and synchronize them with brain activity data, build new conceptual and computational frameworks of behavioral systems, and disseminate new tools to the research community.” This seminar series will explore various aspects of brain initiative with cutting edge emerging technology tools and key questions to manage various health and security issues using these technologies. The class is consists of guest speakers who are investigating variety of brain research technologies from advanced studies in gut and brain axis to motor neuron manipulations all the way to defense capabilities. The team of instructors have unique diversity of backgrounds from biomedical policy to neuro-ethics to engineering. Students will learn cutting-edge brain sciences while critically evaluate these technologies from ethical points of view and create policy proposals for appropriate regulations.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6710 Emerging Health Threats 3 Credits

This course aims to provide a comprehensive understanding of the complex ethical dimensions of global health. It will explore ethical issues concerning three dimensions of global health: practice, policy, and research. It will address chronic and contemporary ethical issues in the field by unpacking the power imbalances in global health and examining the history and current practices in the field.

Part 1 will provide a historical background of the evolution of the field of global health and clarify the rationale for practicing global health ethics. Part 2 will focus on understanding the ethical issues concerning the practice of global health. It will present the ethical dilemmas inherent in disease-specific global health programs such as HIV, Malaria, Cancer, and the ongoing COVID-19 pandemic, focusing on unequal access to quality technologies and treatment as well as issues concerning the disproportionate burden of the diseases in LMICs. Part 3 will focus on Global health policy and governance and will examine the ethical implications of the evolving global health governance landscape. The students will study the role of different global health actors in global health governance, including multilateral organizations, financial institutions like the World Bank, Civil Society Organizations, and commercial actors and will explore issues such as ‘philanthrocapitalism’ to understand the ethical issues regarding philanthropy in global health. Part 4 will focus on ethical issues concerning global health research and evaluate the ethical dimensions of global health research and engage with concepts like ‘parachute research’, author reflexivity in addition to covering topics related to informed consent, preserving data privacy, and engaging with communities, while also contemplating the ethical obligations of investigators towards the communities they investigate. Finally, students will learn about approaches for ethical global health practice by studying models of global health accountability such as the Framework for Tobacco Convention and People’s Health Movements. They will also read about new initiatives like the Global Health 50/50 report as an accountability mechanism for improving gender equality in global health. Students will end the course with a speculative design exercise where they will develop a model for an ethical global health system.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6715 Nuclear Weapons/Power Nonpro 2 Credits

Nuclear Weapons, Nuclear Power and Non-proliferation is a graduate course that examines the most prominent weapon of mass destruction, the atomic weapon and explains how nuclear weapons and nuclear technology risk compares to biothreats and emerging infectious diseases. The course provides the context concerning other WMD risks. The course has five content units. The first unit introduces nuclear weapons and material. Unit 2 explains nuclear weapons their construction and delivery. Content Unit 3 presents the components and distribution of nuclear power. Unit 4 discusses the international norms that exist to control nuclear weapons and material. Unit 5 addresses nonproliferation and counterproliferation efforts and the reasons to do so.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6724 Health Preparedness Management 2 Credits

The integration of Public Health Preparedness and Emergency Management will discuss the fundamentals of public health preparedness, emergency management, and the integration of the two into a cohesive preparedness and response management system.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6741 Policy Pandemic Management 2 Credits

This class will examine the policy landscape important for emergency management; including the lessons learned and new directions in public, animal, and plant health policies resulting from previous nationally significant epidemics and pandemics. Topics will span all levels of Federal, State, Local, Tribal, and Territorial (FSLTT) government policies and international frameworks, as possible, to give students a perspective on the ways in which policies at each level rely on coordination to affect the best outcome. Perspectives will be captured from these levels to identify and understand how strengths and shortcomings in past pandemic management can inform future emergencies from a One Health perspective.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6745 Border Control 2 Credits

This course will combine expert presentation(s) on the bio-risk of infectious diseases emergence outside their historical territories, as well as the regulations and strategies needed to prepare for and prevent these border transgressions. The objective of this seminar is to address the factors that, on the one hand, promote biological risk at the border in the context of varied and complex situations related to the biotic (mobility, endemic/enzootic, social unrest, etc.) and abiotic (landscape, climate, etc.) environments present at the border. And on the other hand, to identify the solutions (tools and strategies: detection, quarantine facilities, etc.) and regulations (National and International Health regulations) necessary to prevent and control biological risk at the port of entry.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 6803 Biosafety, Biosecurity Biodefense 2 Credits

This class will explore key elements of biosafety, biosecurity and biodefense. We will discuss how the past has influenced aspects of each discipline while focusing our efforts on their evolution in the current health security landscape.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 6805 Emerging Biotechnologies 2 Credits

Emerging technologies are transforming the life sciences. In the past decade, researchers worldwide have embraced a multidisciplinary approach that combines biological techniques, elements, and systems with engineering concepts, empowered by rapidly growing global capacities to manage and analyze complex biological data and disruptive discoveries in gene editing. Current and future technologies in the biosciences – including cellular biotechnologies, synthetic biology, and genomic medicine – have the potential to transform research, medicine, and public health, with implications for the sciences, society, and security. MICB 805 is a graduate seminar that will introduce the biological basis, hope, and hype of these emerging technologies through the review of current technical and policy literature. Students will prepare a policy brief with recommendations for policies and/or regulatory frameworks to balance the benefits and risks of these emerging technologies for science and society.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 7001 Regulatory Science I: LawSci 3 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the following programs:

- MS-BHTA
- MS-BHTA-SM
- MS-BSPA
- MS-BSPA-SM
- MS-MICB
- MS-MICB-SM
- PHD-MICB
- PHD-MICB-SM

Enrollment is limited to Graduate level students.

BHTA 7003 Regulatory Science II 3 Credits

Med Dent NE301.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

BHTA 7005 Science DiplomacyWorldHealth 2 Credits

Med Dent Proctor Auditorium South

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the following programs:

- MS-BHTA
- MS-BSPA
- MS-INNS
- MS-MICB
- PHD-MICB

BHTA 7708 Immunogenetics in Health Dis 2 Credits

MedDent NE301

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the following programs:

- MS-BHTA
- MS-BHTA-SM
- MS-BSPA
- MS-BSPA-SM
- MS-MICB
- MS-MICB-SM
- PHD-MICB
- PHD-MICB-SM

Enrollment is limited to Graduate level students.

BHTA 7709 Immunogenetics:Evo/HumanHealt 2 Credits

MedDent NE301

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 7800 Globl Infectious Dis: Int Pers 2 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BHTA 7801 Sem:Global Infectious Diseases 2 Credits

MedDent NE301

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

Enrollment is limited to Graduate level students.

BHTA 7901 Border Security 1 Credit

Border Security: Intersection of Global Health and Biorisk Management; International Trade, Emerging Bio Threat and Trends. This graduate seminar combines presentations by experts in biosecurity and biosafety, international policy and protocols, trade and transport regulations, migratory patterns of human, livestock movements and biotechnology/dual use and criminal activity with an analysis of the primary literature in key topics in global risk of infectious diseases. You will be taught the basics of biosecurity and safety as they relate to diplomacy, intelligence, military, enforcement, economics, legislative and medical science (research, emerging epidemic events, pathogen detection, public and veterinary health). Presentations will provide an overview of global health and security issues in the context of border biohazards supported by regional or national case studies. The purpose of this seminar series is to outline possible linkages between the security and health communities, the potential for collaboration in identifying vulnerabilities and recommending viable options to more effectively secure air, sea, land, and cyber borders. These risk factors will be put into perspective from the critical relationship of Global Health, Criminal and Terrorist Activities, International Trade and Commerce, Migratory Patterns of Pathogens, Select Agents, and Pandemic Risk. The curriculum will provide expert presentation(s) on biorisk of infectious disease emergence outside the territories where they are known, as well as the regulations and strategies in place, or required, to prepare for and prevent these border transgressions. The objective of this seminar is to spur discussion to address the factors that promote biological risk at the ports of entry. Moreover, to promote collaborative strategies, policy, and regulatory protocols necessary to prevent and control such biological risk. This course uses a combination of lecture approaches, discussions, and student engagement. Students are expected to read the material provided and to be prepared to participate in all discussions. Written and oral presentations by the students, will constitute the final exam. This course is only open to Ph.D. and M.S. students in the Department of Microbiology and Immunology. This one-credit class meets every week of the semester. Seminars are held during the spring semester, with lectures focusing on concepts of border biohazards.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy or Master of Science degrees.

BHTA 7906 Biomed SciPol Capstone Project 3 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA or MS-BSPA programs.

Enrollment is limited to Graduate level students.

BHTA 7907 Biomed SciPol Capstone Project 3 Credits

MedDent Building

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-BHTA, MS-BSPA, MS-MICB or PHD-MICB programs.

BHTA 7950 Internship Experience 2-4 Credits

Internships are a critical part of the academic and professional development of students in the Biomedical Policy & Advocacy and the Biohazardous Threat Agents and Emerging Infectious Diseases Masters Programs. This course allows students to enhance their professional, technical, and networking skills through a planned, supervised, and evaluated internship experience. During this 2-credit elective, the student works 60 hours, or a minimum average of 6 hours per week for 10 weeks, on-site at a sponsoring agency or organization under the direct supervision of a Site Preceptor. The internship site, specific learning objectives, and activities are determined by the student and the site preceptor, with the approval of the MICB Course Directors. Students will work with the Course Directors to develop learning objectives for the internship. Students are expected to apply their academic knowledge and demonstrate enhancement of professional and analytical skills during the internship. The internship course is open to full-time students in their second semester of study, or those who have completed at least 12 credit hours of coursework, with at least a 3.0 (B average).

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Microbiology Immunology, Microbiology Immunology, Microbiology Immunology or Microbiology Immunology.

Enrollment limited to students in the MS-BHTA-SM or MS-MICB-SM programs.

Enrollment is limited to Graduate level students.