Global Infectious Disease (GLID)

GLID 5000 Perspectives in Infect. Dis. I 3 Credits
This course is arranged across three modules, each of which will highlight science, policy, data, and other interdisciplinary elements needed to help control the infectious disease problem. The topics of the modules rotate annually but include diseases like HIV, malaria, neglected tropical diseases, antimicrobial resistance, rabies, and Covid-19; some modules will not be disease-specific but will be structured to address prominent problems in or approaches to global health, such as global health governance. Fall 2022 modules are tentatively on HIV, Ebola, and neglected tropical diseases. Modules will be taught by faculty with expertise in the various topics, and guest lecturers from the United States and abroad may participate to complement this expertise and provide external perspective. The course emphasizes development of strong written and verbal skills. Registration requires instructor approval for non-GLID students; while there are no pre-requisites, we recommend the course for students who have taken college-level biology or microbiology courses; experience with political science and/or economics classes also supports success.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 5001 Perspectives in Infect Dis II 3 Credits
This course will provide a multidisciplinary foundation to understanding infectious diseases, their impacts, and multisectoral approaches to prevention, preparedness, and response. It will cover areas including cell and molecular biology, microbiology, pathogenesis, infection and immunity, and epidemiology, as well as policy and political considerations. The course will cover a set of globally relevant infectious diseases presented as a series of modules. Each module will highlight basic science elements, data analysis and modeling, and policy, and employ exercises and case studies to help students understand how these areas intersect. Course instruction is provided by a set of Professors expert in given technical areas and pathogens; each disease module will have a Professor serving as the Module Lead. This course is a continuation of GLID 501 and advances concepts developed in that course; GLID 501 is not a pre-requisite
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 5010 Epidemiology of Infect Disease 3 Credits
This course covers the basics of epidemiology and biostatistics with an emphasis on infectious disease methods (e.g., surveillance, outbreak investigation) and substance (e.g., transmission risks and dynamics) compared to standard epidemiology courses. Covers fundamentals of descriptive epidemiology, surveillance systems, and disease dynamics. Some minimal coverage of research design and analytical epidemiology. Students must have prior coursework in statistics or biostatistics.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate or Undergraduate level students.

GLID 5011 Research Methods Ethics 1 or 2 Credits
This course is designed as a workshop experience which will meet over two Saturdays. It is designed to allow students to deeply explore an academic topic, problem, issue, or idea of individual interest related to global health. Students will learn and practice the design, plan the implementation of an investigation to address a research question that they will choose. Specific topics will include research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information. Students will reflect and document their processes, and collect their scholarly work in a portfolio that will contain the research question, literature review, proposed methodology and plan.
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 5020 Evidence for Infect Dis Policy 3 Credits
This course will build students' ability to identify and evaluate evidence related to infectious disease, and to learn to translate evidence into recommendations for policy. Both qualitative and quantitative evidence will be covered. The course will in particular explore how quantitative evidence can drive decision making for infectious disease problems. Students will learn how to evaluate model-based or other quantitative findings for public health policy. Special attention will be paid to representation of uncertainty, comparing evidence across studies and the importance of qualitative conclusions from quantitative studies. The course will build on students' prior experience reading scientific papers and reports. Students taking the course should have background in biology, statistics, and epidemiology, as well as some coursework or other relevant exposure to policy and policy analysis. The course's lead instructor, Dr. Martha Nelson, will invite experts in data modeling, infectious disease policy, and other fields to guest lecture and draw on their publications and real-world experiences. In addition to graduate students, the course is open to senior undergraduates from Biology, Biology of Global Health, and School of Foreign Service.
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 5030 Global Health Security Dipl 3 Credits
Global Health Security and Diplomacy will explore the interconnection between international affairs and the science and technology of critical global health issues such as pandemic preparedness and response (eg, Zilka, Ebola, influenza); infectious diseases such as HIV, malaria, and TB; the rising spread of noncommunicable diseases such as tobacco and diabetes; regulation of medicines, health products and food; and the securitization of health. This seminar will examine the role of diplomacy and policymaking processes in addressing these issues including the development of national foreign policies for global health; the establishment of treaties and international agreements; negotiations with public, private and philanthropic players; and governance of international organizations and public-private partnerships. In this course, the student will seek to understand the role that diplomatic and political processes play in shaping global health programs, policies and operations through readings, discussion and lecture and present a paper on a specific topic chosen in conjunction with the professor of her/his choosing.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)

GLID 5500 Engaging Commun. for Health 3 Credits
Engaging Communities for Health introduces students to the core principles, practices, policies, and capabilities that are required to engage communities around all aspects of infectious disease surveillance, control, and response. It moves beyond short-term outbreak dynamics to provide the tools to students to engage in structural, multi-scalar, and social, cultural, economic, and political analysis. By the conclusion of this course, students will have a comprehensive theoretical, methodological, policy, and applied foundation for using community-based strategies for infectious diseases in partnerships with local communities, governments, researchers, and policy makers. Students will demonstrate command over the factors that impact engaging communities for health from a multi-scalar perspective, and will be prepared to advocate, implement, and analyze impactful community engagement action.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)

GLID 5522 Modeling Populations Diseases 3 Credits
Population biology is a quantitative science dealing with changes in the size and composition of populations, and population biologists often use mathematical models to infer population dynamics. These models use information about the properties of individuals and basic assumptions about their interactions to predict population size, gene frequency, and optimal behavioral strategies of individuals, forming an important conceptual framework. Junior and Seniors only. This course shows what kinds of insight mathematical techniques can give to about biological populations of individuals, communities, and cells. My expectation is that all of you have had a good foundation in biology and some mathematics, but you won't be expected to remember every detail. You will see a good deal of mathematics and biology in this course, and we won't be assuming a great deal of prior knowledge. However, you will be expected to grasp new knowledge conceptually and demonstrate knowledge through in-class computer lab exercises, homework assignments and projects.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)

GLID 5562 Infection and Immunity 3 Credits
This course will combine topics in microbial pathogenesis, pathogen life cycles, modes of disease transmission, interventions (vaccines & therapeutics) and immunology. Students will become facile with mechanisms used by bacterial, fungal, viral and parasitic pathogens to replicate in hosts, transmit between hosts and to produce disease states in them. Students will also learn about basic immune mechanisms involved in fighting infections, contributing to disease states and important for development of vaccines.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)

GLID 5600 Conversations with GLID 1 Credit
The topic of this semester's Conversations with GLID class will be "How to End a Pandemic." This conversations class will focus on stories from the front lines of people engaged in ending the COVID-19 pandemic and the steps they have taken to mitigate the impacts of the virus. COVID-19 has demonstrated that ending a pandemic requires a multisectoral response. This course will highlight how a multidisciplinary approach to infectious diseases has worked in practice. Guest speakers each week will discuss their pandemic activities, such as designing the logistics to vaccinate the American population, ramping up the vaccine development process, advising governments and private sector entities, creating surveillance testing programs, communicating public health practices to the public, standing up contact tracing programs, protecting vulnerable populations, organizing governors, and keeping hospitals safe. Students will be asked to introduce speakers, come up with weekly discussion questions, and write at least one reflection.
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 6010 Analytic Methods in Epidemiol 3 Credits
This course is focused on research design and epidemiological analysis. While it is being offered by GLID, it is not specifically geared toward infectious disease, although infectious disease will provide examples of key principles. Covers the logic of epidemiology and using statistical inference as a tool in epidemiologic research; research methods like traditional epidemiological designs, impact evaluation/ health services; systematic reviews and meta-analysis; and other topics.
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 6020 Policy Analysis for GLID 3 Credits
Students will develop skills for policy analysis related to global health and global health security.
Level: Graduate, Undergraduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 7800 Dis. Research Methods 2 Credits
This graduate-level research methods course will train students in a wide range of qualitative and quantitative methodological and analytical approaches necessary for careers in global health and infectious disease policy, research, and practice.
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 7949 GLID Independent Study 1-3 Credits
independent study
Level: Graduate
Grading: Main Campus (UGrad, Grad)
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 7990 GLID Capstone 2 Credits
GLID master's students are required to complete a capstone research project in their final semester. The nature of the project will be mutually agreed upon among the student, course director, and at least one faculty mentor during the summer prior to enrollment. The project will be used to demonstrate mastery in the core competencies from the student's concentration (data modeling or science policy).
Level: Graduate
Grading: Pass/Fail Default
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 9991 Continuous Registration
Level: Graduate, Undergraduate
Grading: No Grade
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 9992 Continuous Registration
Level: Graduate, Undergraduate
Grading: No Grade
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 9993 Continuous Registration
Level: Graduate, Undergraduate
Grading: No Grade
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 9994 Continuous Registration
Level: Graduate, Undergraduate
Grading: No Grade
Course registration restrictions:
Enrollment is limited to Graduate level students.

GLID 9999 Thesis Research
Level: Graduate
Grading: No Grade
Course registration restrictions:
Enrollment is limited to Graduate level students.