UC DAVIS
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

Global Disease Biology Minor

Global Disease Biology (GDB) is a program that allows students to study disease and its relationship to the health of people, animals, plants, and the environment in a global context. The program uses an interdisciplinary approach to advance understanding of diseases, societal and personal impacts, and the science behind discoveries, causes, evolution, diagnosis, treatment and prevention of diseases. Students interested in the health sciences will integrate concepts from multiple disciplines to learn how to solve global disease and health challenges using innovative approaches.

GDB MINOR REQUIREMENTS (20-22 units):

		Prerequisites	Units	Qrtrs	Completed
Global disease biology core: *(17 UNITS)*					
SAS 13	Disease and Society	--	3	F, W	
PMI 129Y	One Health: Human, Animal & Environment	Good academic standing	3	F,W	
VME 158	Infectious Disease in Ecology and Conservation	BIS 2B	3	W, S	
GDB 101	Epidemiology	BIS 2A-C; SAS 13; STA 13	4	F,W	
GDB 102	Disease Intervention and Policy	BIS 2A-C; SAS 13; GDB 101; PMI 129Y; VME 158	4	S	
Choose *one* of the following: *(3-5 units)*					
PLP 120	Introduction to Plant Pathology	BIS 2C; MIC 102 recommended	4	F, S	
PLP 130	Fungal Biology and Disease	BIS 2A-C	3	S	
PMI 127	Medical Bacteria and Fungi	Any MIC course with lab, immunology recommended	5	S	
MIC 162	General Virology	BIS 101; BIS 102 or 105 recommended	4	W	
PMI 128	Biology of Animal Viruses	BIS 102 or 105	3	S	
ENT 153	Medical Entomology	BIS 2A-B	3	W	
ENT 156	Biology of Parasitism	BIS 2A	4	S	
GDB 103	Microbiome of People, Animals & Plants	BIS 2A-C	3	W	

IMPORTANT:

If you plan to declare the GDB minor, you **MUST** meet with our office to set up an academic plan before your last year. If it is your last year at UC Davis, and you haven't met with a GDB advisor, you may not be able to declare the GDB minor.

GDB 101 and GDB 102* will ***only *be taught once in an academic year and enrollment is restricted to GDB MAJORS during pass one.***

revised: 07/01/2019

Minor Program Courses:

SAS 13. Disease and Society (3)

Lecture—3 hour(s). Limited enrollment. Introduction to the concept of disease, the societal and personal impacts of past, present and future diseases, and the science behind disease discoveries, causes, evolution, diagnosis, treatment, and prevention.

PMI 129Y. One Health Fundamentals (3)

Lecture/Discussion—3 hour(s); Web Electronic Discussion. Introduction to fundamentals, challenges, and opportunities in One Health using local and global health case studies. Animal, human, and environmental health problems, along with tools and transdisciplinary approaches, will be introduced to foster innovative thinking that addresses complex issues.

VME 158. Infectious Disease in Ecology and Conservation (3)

Lecture—3 hour(s). Introduction to the dynamics and control of infectious disease in wildlife, including zoonotic diseases and those threatening endangered species. Basic epidemiological models and application to field data. Scientists' role in developing disease control policies.

GDB 101. Epidemiology (4)

Lecture—2 hour(s); Laboratory—3 hour(s); Discussion—1 hour(s). Principles and practice of epidemiology as applied to human, animal, and plant populations and the environment in which these populations co-exist. Quantitative analysis of both infectious and non-infectious disease. Inter-dependence between epidemiological analysis, decision-making and policy formulation will be highlighted.

GDB 102. Disease Intervention and Policy (4)

Lecture—3 hour(s); Discussion—1 hour(s); Project (Term Project). Examination of the prevention and treatment of diseases affecting humans, animals, and plants. Case studies will illustrate the merits of a unified approach to promoting health at local, regional, and global scales.

GDB 103. The Microbiome of People, Animals, and Plants (3)

Lecture—3 hour(s). Examination of the structure and function of microbial communities that live inside and on host organisms. Introduction to general concepts of the microbiome and microbiota, and their relationship to host health and disease.

PLP 120. Introduction to Plant Pathology (4)

Lecture—2 hour(s); Laboratory—6 hour(s). The nature, cause, and control of plant diseases.

PLP 130. Fungal Biology and Disease (3)

Lecture—3 hour(s). Course devoted to physiology, cell biology and biochemistry of fungi, pathobiology of the diseases that fungi or their metabolites cause on plants, animals and humans, and the control of fungal pathogens using fungicides. Intended for students with an interest in plant pathology, medical microbiology, veterinary medicine, or environmental microbiology.

PMI 127. Medical Bacteria and Fungi (5)

Lecture—3 hour(s). Pass One restricted to Microbiology majors. Introduction to the bacterial and mycotic pathogens of man and animals, with emphasis on pathogenic mechanisms and ecologic aspects of infectious disease.

MIC 162. General Virology (4)

Lecture—4 hour(s). Integrated presentation of the nature of animal, bacterial, and plant viruses, including their structure, replication and genetics. Three units to students who have completed PMI 128.

PMI 128. Biology of Animal Viruses (3)

Lecture—3 hour(s). Fundamental physical and chemical properties of animal viruses; methods of propagation, purification and assay. Mechanisms of viral replication and pathogenesis of viral infections in man and animals. Immunity to virus diseases and oncogenic properties of animal viruses. Two units of credit given if completed MIC 162.

ENT 153. Medical Entomology (3)

Lecture—3 hour(s). Basic biology and classification of medically important arthropods with special emphasis on the ecology of arthropodborne diseases and principles of their control. Relationships of arthropods to human health.

ENT 156. Biology of Parasitism (3)

Lecture/Discussion—3 hour(s). Lectures on the biological and ecological aspects affecting host-parasite relationships using selected examples from protozoan and metazoan fauna.