

### DMP Course Offerings (Updated 11/15/2023)

Course Number	Title / Coordinator	Credit Hours	Offered/Status	Designation/Standing	Catalog Description/Prerequisites
DMP 313	Introduction to Epidemiology / Cernicchiaro	3	Spring	Undergraduate	This introductory course explores the concepts, methods, and tools of epidemiology; the science of disease occurrence and distribution. Students will learn how epidemiologists gather, analyze, and interpret information on the occurrence of infectious, non-infectious, and chronic diseases. Offered in Spring (every year).
DMP 314	Environmental and Public Health / Kastner	3	Spring	Undergraduate	This introductory course explores environmental health, the branch of public health that focuses on relationships between the environment and human health and well-being including the promotion of safe communities at the local, regional, national, and global level. Students will explore physical, chemical, biological, social, and psychosocial factors in the environment that impact human health and the ways in which societies create environmental health hazards.
DMP 611	Cow-Calf Health System / Hanzlicek	2	Spring	Graduate	Management of animal well-being and efficient production in a cow-calf system. Includes the areas of health, growth, nutrition, pharmaceutical management, and reproduction.
DMP 680	Problems in Pathobiology / Nagaraja	1 to 5	Spring, Summer, Fall	Graduate	Enrollment is by consent of the instructor. The format and credit hrs for the course are determined by the instructor.
DMP 690	Essential Practices for BSL-3 Research Settings / Vanlandingham	1	Summer	Graduate	This one-credit online and in-person course is an introduction to high containment laboratory procedures, specifically focused on the BSL-3 laboratory. Classes are held asynchronously online via Canvas, with additional to 2-days of in-person classes held at the K-State Biosecurity Research Institute. Some of the skills covered include: biosafety and biosecurity considerations, entry and exit procedures, use of the biosafety cabinet, record keeping, emergency protocols, and regulations.
DMP 691	Introduction to High Containment Laboratory Topics and Techniques / Vanlandingham	2	Summer	Graduate	This three-credit online course focuses on basic information needed to work in a High Containment Research Laboratory and includes: online lectures, readings, online discussions, and student presentations via zoom. Topics include understanding regulations, biosafety and biosecurity, and introduction to techniques commonly used in a viral diagnostic laboratory.

DMP 710	Intro to One Health / Kincaid	2	Summer, Fall	Graduate	One Health encompasses the complex interrelationships among humans, animals, and the environment. This online course provides a broad introduction to One Health, incorporating original videos of leading experts, case studies, and scientific readings. It addresses zoonotic diseases and environmental issues that impact human, animal, and ecosystem health. Prerequisite: Two courses in biology.
DMP 754	Intro to Epidemiology / Larson, Shane	3	Spring, Fall	Graduate	The purpose of this course is to introduce students to the basic principles and methods of epidemiology in order to recognize and understand how disease affects populations (and the associated implications for individuals). This course will prepare students to use epidemiologic methods to solve current and future challenges to diagnose, treat, prevent, and control disease during their professional training and throughout their career.
DMP 770	Emergency Diseases / Briggs	3	Summer	Graduate	An investigation into recently identified emerging diseases, the conditions that enable their emergence, and the human health implications of each disease. This class is open to all students with some biology background, as well as veterinary students. Prerequisite: 3 hours of Biology above a 700 level.
DMP 802	Environmental Health / Kincaid	3	Spring, Summer	Graduate	This is a three-credit graduate-level course consisting of a 3-hour meeting per week. Students will be exposed to professional practice of environmental sciences, epidemiology, toxicology, occupational health and industrial hygiene, and consumer health and safety.
DMP 813	Select Agent Studies / Vanlandingham	3	Summer	Graduate	This three-credit synchronous and asynchronous online course provides an overview of the various agents listed in the select agent program and the regulations associated with this program. Specific topics include: lectures and student presentations on many of the agents covered in this program, an historical overview of select agent regulations, program rationales, tier one regulations, personnel suitability assessments, inventory systems, and oversight. Other topics include: Dual-Use regulations and NIH Guidelines for Recombinant DNA.

DMP 814	Veterinary Bacteriology & Mycology (lecture only)	3	Spring	Graduate	This course deals with pathogenic bacteria and fungi that infect and cause diseases in domestic animals. The course will emphasize the 'bacteriology' and 'mycology' of infectious diseases, i.e., morphological features, growth characteristics and major biochemical activities of the organisms, the virulence factors, the pathogenesis of the infection, clinical signs and lesions, and antibiotics and vaccine to treat and control.
DMP 815	Multidisciplinary Thought and Presentation / Kastner	3	Spring, Summer, Fall	Graduate	Training in critical thinking, writing, and speaking for the food, veterinary, plant, health, and related sciences. With emphasis on writing, students prepare technical reports, news releases, abstracts, and commentaries.
DMP 816	Trade & Agricultural Health / Kastner	2	Spring, Fall	Graduate	This course considers the multilateral trading system as it relates to food safety, food security, animal health, plant health, and international cooperation. The course content will be of value to students interested in food safety and security, epidemiology, public health, agriculture, food science, security studies, political science, agricultural economics, veterinary medicine, and international relations.
DMP 817	Principles of Veterinary Immunology / Mwangi	3	Spring	Graduate	Innate and adaptive defense mechanisms in domestic animals. Topics include Immune response to pathogens, mucosal immunity, vaccinology, immunobiology of tumors, neonatal immunity, immunopathology, tolerance and autoimmunity, immunodeficiency, and immunotherapy. Prerequisite: BIOCH 521 and BIOL 455
DMP 818	Veterinary Epidemiology / Renter, Hanthorn, Larson	2	Spring	Graduate	Introduction to the principles and methods of veterinary epidemiology: emphasizing how diseases affect populations (and associated implications for individuals), and application to disease diagnosis, treatment, prevention, and control.
DMP 820	Rumen Metabolism / Nagaraja	3	Fall	Graduate	The course deals with physiological anatomy of the ruminant stomach, motility patterns of the reticulum and rumen, salivary glands and saliva production, liquid and solid rates of passage, fermentation and metabolism of carbohydrates, proteins, non-protein nitrogen, and lipids, and ruminal fermentative disorders. Prerequisite: Courses in Animal Nutrition (ASI 318) and General Biochemistry (BIOCH 521 or BIOCH 755).

DMP 830	Quantitative Analysis in Food Production Veterinary Medicine / Gebhardt	3	Fall	Graduate	Practical experience managing, describing, and interpreting data from animal health and management systems so that the data can be informative for decision-makers evaluating and implementing health programs, diagnostic strategies, and animal management processes. Prerequisite: Successful completion of the first year in the veterinary curriculum.
DMP 831	Veterinary Virology / Vanlandingham	3	Fall	Graduate	Morphology, biology, and classification of viruses and their relation to the causes of disease. Veterinary Virology is a 3 credit lecture course that is designed for veterinary students in the second year of the professional curriculum.
DMP 832	General Pathology / Mosier	4	Fall	Graduate	Etiology, pathogenesis, lesions, and termination of processes of disease, including inflammation, necrosis, regeneration, oncology, and disturbances of metabolism, circulation, and growth. Three hours lec. and four hours lab a week. Prerequisite: AP 800, AP 816, and AP 810.
DMP 834	Veterinary Parasitology / Herrin	4	Fall	Graduate	Study of helminth, arthropod, and protozoan parasites of companion and food animals. Emphases are on diagnosis, clinical signs, lesions, treatment, control, epidemiology, and public health aspects of parasitic disease. Three hours lec. and four hours lab a week. Prerequisite: AP 810, AP 804, AP 818, and DMP 817 and DMP 818.
DMP 840	Public Health Field Experience / Mulcahy	3 to 6	Spring, Summer, Fall	Graduate	Repeatable for credit. Prerequisite: Enrollment in MPH program. Instructor permission required.
DMP 841	Veterinary Public Health / Mulcahy	2	Spring	Graduate	The linkages between human health and animal health. Topics include zoonotic disease, emerging and transboundary animal diseases, disaster preparedness, regulatory and community health issues focusing on the role of the veterinarian in public health. Two hours lecture per week. Prerequisites: Second year standing in the CVM and DMP 818.
DMP 844	Global Public Health / Briggs	3	Fall	Graduate	A review of global health problems and various strategies to manage international health concerns. The class is open to graduate students, including veterinary students, with an interest in public health that have at least 12 hours in biology or related courses.

DMP 846	Foundations of Biosecurity / Vanlandingham	3	Summer	Graduate	This three-credit synchronous and asynchronous online course provides an opportunity to gain a more in depth understanding of biosecurity policies and procedures required in high containment research facilities with a focus on threat assessment. This course aims to provide students with the opportunity to identify, understand, and discuss potential threats to agricultural biosecurity in the U.S. and the world in order to identify threat agents that potentially should be studied in a high containment facility.
DMP 850	Immology of Domestic Animals / Adams	3	Fall	Graduate	This course is designed to introduce graduate students to the immune system of domestic animals, highlighting important differences from the immune systems of humans and rodents. The goals of the course are to: 1) provide students with the basic information necessary to understand the immune system and its functions in health and disease; 2) provide students with knowledge of the tools and techniques available for studying the immune system in domestic animal species; and 3) increase the student's ability to comprehend, present and critique the primary literature in a faculty guided setting.
DMP 854	Intermediate Epidemiology / Sanderson	3	Spring	Graduate	Epidemiologic principles of disease with a focus on measures of infectious disease occurrence, association and impact, determinants of disease, diagnostic test evaluation, study design and critical literature evaluation. Prerequisite: DMP 708 or DMP 754 or equivalent AND STAT 701 or STAT 703 or DMP 830 or equivalent.
DMP 857	Systemic Pathology / Mosier	5	Spring	Graduate	Pathology of the organ systems of domestic animals including gross and microscopic study of lesions. Three hours lecture and six hours lab a week. Prereqs: DMP 832.
DMP 858	Introduction to Infectious Disease Modeling for Animal Health / Sanderson	3	Summer	Graduate	Principles for understanding and implementing infectious disease transmission models. The course is focused on food animal diseases using a mixture of lecture, scientific literature evaluation, discussion and hands on computer lab modeling exercises.

DMP 870	Seminar in Pathobiology (MS) / Chang, Reif, Shane	1	Spring, Fall	Graduate	Oral presentations on topics including bacteriology, epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, toxicology and virology. Reports will include critical review of the relevant literature; experimental design and methodology; and presentation and critical evaluation of data. The course is for MS students.
DMP 871	Molecular Diagnostics of Infectious Diseases / Bai	3	Fall	Graduate	This graduate level course is to introduce molecular diagnostic technologies, diagnostic assay development and applications for infectious diseases. Prerequisite: BIOCH 521. Students without the prerequisites must have the permission of the course coordinator.
DMP 880	Problems in Pathobiology / Nagaraja, Mulcahy	1 to 6	Spring, Summer, Fall	Graduate	A special problems course for graduate students working toward the MS degree in Pathobiology. The course is generally problems- or techniques-based in any of the disciplines in the Pathobiology program, conducted under the supervision of a graduate faculty in the Pathobiology Graduate Program.
DMP 888	Globalization, Cooperation & The Food Trade / Kastner	1	Spring, Summer, Fall	Graduate	This course will focus on issues and topics including, but not limited to, disputes in the international agricultural and food trade, new concepts such as Food and Agriculture Security, and the food-related challenges faced by wealthy as well as economically poor societies. The course will also address such important topics as the roles played by innovation and investment in the agricultural and food system, the importance of cross-border cooperation in regulation and trade, and the accomplishments of public health and trade policy thought leaders across history.
DMP 893	Principles of Biosafety & Biocontainment / Vanlandingham	2	Spring	Graduate	This course will introduce participants to the advanced and administrative principles of biosafety and biocontainment. The course targets future P.I.'s, lab managers, and individuals with previous high-containment research experience. Specific topics include laboratory biosafety levels, special considerations for agriculture and animal labs, facility and building design, regulations, biosafety practices and procedures, and risk assessment processes required in high and maximum containment research facilities.

DMP 895	Topics in Pathobiology (MS)/Advanced Design and Analysis of Randomized Trials / Cernicchiaro, Nagaraja	0-18	Fall	Graduate	A special course for graduate students working toward an MS. Lectures, reading, and discussion of topics on design, analysis and interpretation of population data. Offered in Fall of odd years (Please contact course coordinator for more information).
DMP 898	MS Report in Pathobiology / Adams	2	Spring, Summer, Fall	Graduate	A written report of either laboratory-based research, field-based research, or a review paper on a topic in the major field.
DMP 899	MS Research in Pathobiology / Adams, Mosier	0-18	Spring, Summer, Fall	Graduate	For graduate students working towards the MS degree. Individual research in the fields of epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology.
DMP 910	Pathogenic Mechanism of Viruses / Miller	3	Spring	Graduate	The goals of the course are to learn various pathogenic mechanisms (virus-host interactions) of selected virus (RNA and DNA) and Prion diseases. The course will cover the molecular, cellular and immunological bases of pathogenesis both in vitro and in animal models. Prerequisite: BIOL 730 and BIOL 670.
DMP 925	Rumen Microbiology / Nagaraja	3	Fall	Graduate	The course is for graduate students (MS or PhD) interested in learning about microbial populations of the rumen of cattle and sheep and their role in fermentative digestion. lectures will deal with characteristics of ruminal microorganisms (bacteria, archaea, protozoa, fungi, and bacteriophages), anaerobiosis and its consequences, interactions among ruminal microorganisms, techniques to study ruminal microorganisms, and detailed discussion on microbial involvements in carbohydrate, nitrogen, and lipid fermentations, methanogenesis and acetogenesis in the rumen. Prerequisite: BIOL 455
DMP 954	Advanced Epidemiology / Cernicchiaro	4	Fall	Graduate	Advanced theory and methods of designing, analyzing and interpreting epidemiologic research. Emphasis on observational study design and analysis issues including design and optimization, bias recognition and control, and appropriate analytical approaches for the analysis of epidemiologic data. Prerequisite: DMP 854 and STAT 717, or equivalent training (recommended). Offered in Fall of even years.

DMP 970	Seminar in Pathobiology (PhD) / Chang, Reif, Shane	1	Spring, Fall	Graduate	Oral presentations on topics including bacteriology, epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, toxicology and virology. Reports will include critical review of the relevant literature; experimental design and methodology; and presentation and critical evaluation of data. The course is for PhD students.
DMP 995	Topics in Pathobiology (PhD)/Advanced Design and Analysis of Randomized Trials / Cernicchiaro, Nagaraja	3	Fall	Graduate	A special course for graduate students working toward the PhD degree. Lectures, readings, and discussion of topics of current interest in any of the disciplines of Pathobiology. Offered in Fall of odd years (Please contact course coordinator for more information).
DMP 999	PhD Research in Pathobiology / Mosier	1 to 18	Spring, Summer, Fall	Graduate	For graduate students working towards the PhD degree in pathobiology. Individual research in the fields of epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology.