VTPB - VETERINARY PATHOBIOLGY (VTPB)

VTPB 212 Genetics in the News
Credits 3. 3 Lecture Hours.
Use of contemporary news articles from the popular press to delve into the science of genetics and genomics and their methodologies to gain a deeper understanding of how data is analyzed and interpreted leading to news headlines.
Prerequisites: Sophomore classification or approval of instructor; high school or college course in biology recommended.

VTPB 221 Great Diseases of the World
Credits 3. 3 Lecture Hours.
Great infectious and parasitic diseases; introduction to the major diseases affecting humans and other mammals including plague, tuberculosis, AIDS and malaria.
Prerequisite: Freshman or sophomore classification.

VTPB 285 Directed Studies
Credits 0 to 4. 0 to 4 Other Hours.
Directed individual study of selected problems in microbiology, parasitology, immunology, genetics or pathology as approved by instructor.
Prerequisites: Approval of department head; freshman or sophomore classification.

VTPB 289 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours.
Selected topics in an identified area of veterinary pathobiology. May be repeated for credit.
Prerequisite: Freshman classification.

VTPB 301/WFSC 327 Wildlife Diseases
Credits 3. 3 Lecture Hours.
Basic mechanisms of diseases as they occur in wildlife populations; interplay of habitat requirements, individual physiological requirements and disease producing mechanisms of varied wildlife species.
Prerequisite: Junior classification or approval of department head.
Cross Listing: WFSC 327/VTPB 301.

VTPB 303 Medical Communication in the International Community
Credits 3. 3 Lecture Hours.
To develop an awareness that there is a culture associated with the practice of veterinary and human medicine in other countries.
Prerequisite: Junior or senior classification.

VTPB 334 Poultry Diseases
Credits 4. 3 Lecture Hours. 2 Lab Hours.
Poultry sanitation and diseases. Prevention and control of environmental, nutritional, parasitic and contagious diseases.
Prerequisites: BIOL 107 or BIOL 111; junior or senior classification.

VTPB 404 Amazon Field School
Credits 4. 4 Lecture Hours.
Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences and solutions to biodiversity loss through ecology, culture and governance.
Prerequisites: Junior or senior classification with a minimum GPA of 2.0 and approval of instructor.
Cross Listing: RPTS 454 and WFSC 454.

VTPB 405 Biomedical Microbiology
Credits 4. 3 Lecture Hours. 2 Lab Hours.
Fundamentals of bacteriology, mycology, virology, infectious diseases, immunology and identification of pathogenic microorganisms.
Prerequisite: Junior classification in a biological science.

VTPB 407 Advanced Veterinary Microbiology Laboratory
Credits 1 to 3. 1 to 4 Lab Hours.
Modular course (one credit per module) that covers immunological and molecular techniques used with bacteria, parasites and viruses in animals for diagnostic and identification purposes.
Prerequisites: VTPB 405, VTPB 409 and VTPB 438 or concurrent enrollment; junior or senior classification.

VTPB 408 Clinical Microbiology
Credits 3. 3 Lecture Hours.
Conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body; operates in an integrated manner with the spectrum of microorganisms including viruses, bacteria, fungi and parasites, describing the factors common to all infectious diseases; molecular biology, pathology and immunology explain the mechanisms for spread, immune response and recovery.
Prerequisites: VTPB 405 or BIOL 456 and VTPB 409 or BIOL 454.

VTPB 409 Introduction to Immunology
Credits 3. 3 Lecture Hours.
Diverse concepts relative to immunologic mechanisms inherent to domestic and laboratory animals.
Prerequisite: Advanced classification.

VTPB 410 Cell Mechanisms of Disease
Credits 3. 3 Lecture Hours.
Mechanisms, morphologic manifestations and clinical signs of disease processes at the cellular level.
Prerequisites: CHEM 227 and CHEM 228, or equivalent; junior or senior classification; biomedical sciences major, biomedical engineering major or related field.

VTPB 411 One Health and Tropical Ecology
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Traditional lectures, guest lectures, field excursions, field laboratories, discussions, readings, student oral presentations and case studies; form and function of healthy ecosystems, various forms of ecosystem perturbation and how perturbations influence ecosystem, animal, and human health.

VTPB 412 Techniques of Clinical Pathology
Credits 4. 3 Lecture Hours. 3 Lab Hours.
Theory and pathophysiologic principles underlying laboratory evaluation of disease states; principles of analytical methods with applications in the contemporary biomedical laboratory considered, using selected hematology and clinical chemistry techniques as examples.
Prerequisites: CHEM 228 and CHEM 238; VTPP 423; senior classification in biomedical science or approval of instructor.

VTPB 415 Immunogenetics and Comparative Immunology
Credits 3. 3 Lecture Hours.
Genetic mechanisms used to diversify immune receptors; immunoglobulins, T cell receptors, major histocompatibility complex, natural killer cell receptors, toll-like receptors and many others; selected comparative and veterinary examples of different immune recognition systems; evolution of the immune system.
Prerequisites: Junior or senior classification, GENE 320/BIMS 320 and VTPB 409 or approval of instructor.
VTPB 421 Infectious Diseases of Humans and Animals  
Credits 3. 3 Lecture Hours.  
Pathogenesis of selected bacterial pathogens of humans and animals;  
bacterial virulence factors, host immune responses; current concepts of  
extracellular, facultative intracellular and obligate intracellular bacterial  
diseases.  
Prerequisites: Junior or senior classification.

VTPB 438 Biomedical Virology  
Credits 3. 3 Lecture Hours.  
Fundamental study of nature and characteristics of human and animal  
viruses; classification, morphology, chemical structure, ability to cause  
disease and nature of resulting disease.  
Prerequisite: 3 hours of microbiology or approval of instructor.

VTPB 452 Clinical Veterinary Mycology  
Credits 3. 2 Lecture Hours. 2 Lab Hours.  
Practical application of clinical mycology; laboratory identification of  
important fungal and actinomycotic organisms.  
Prerequisites: Junior or senior classification; VTPB 405 or approval of  
instructor.

VTPB 460 Mammalian Cell Pathobiology  
Credits 3. 3 Lecture Hours.  
Cell signaling and organelle perspective of pathogenesis, mechanisms  
leading to a disease state; fundamental understanding of structural  
and functional properties of mammalian cells; molecular and cellular  
mechanisms underlying health-disease transitions.  
Prerequisites: BIOL 111 and BIOL 112, junior or senior classification or  
approval of instructor.

VTPB 485 Directed Studies  
Credits 0 to 4. 0 to 4 Other Hours.  
Directed individual study of selected problems in microbiology,  
parasitology, immunology, genetics or pathology as approved by  
instructor.  
Prerequisites: Approval of department head; junior or senior  
classification.

VTPB 487/BIOL 487 Biomedical Parasitology  
Credits 4. 3 Lecture Hours. 2 Lab Hours.  
Helminth and protozoan parasites of medical and veterinary importance;  
life cycles, morphology, taxonomic classification, economic and public  
health aspects and current topics in parasitic diseases.  
Prerequisites: BIOL 107 or BIOL 114; junior classification or approval of  
instructor.  
Cross Listing: BIOL 487/VTPB 487.

VTPB 489 Special Topics in...  
Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.  
Selected topics in an identified area of microbiology, pathology, genetics,  
immunology, parasitology, or physiological chemistry. May be repeated  
for credit.  
Prerequisites: Junior or senior classification and approval of department  
head.