VTMI - VETERINARY MICROBIOLOGY

VTMI 604 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.
Cross Listing: RPTS 654 and WFSC 654.

VTMI 610/VIBS 610 Epidemiologic Methods II and Data Analysis
Credits 4. 3 Lecture Hours. 3 Lab Hours.
Principles and methods for the analysis of data from epidemiologic studies including the purpose of data analysis and role of statistics, sampling distributions, probability distributions, analysis of crude, stratified and matched data, and the use of linear and logistic regression methods.
Prerequisites: VIBS 608 and STAT 651 or approval of instructor.
Cross Listing: VIBS 610/VTMI 610.

VTMI 614 Fermentation and Gastrointestinal Microbiology
Credits 3. 3 Lecture Hours.
Fermentation and gastrointestinal ecosystems in terms of microorganisms present, their activities and requirements and their interactions in a dynamic system.
Prerequisite: Beginning microbiology and/or biochemistry or approval of instructor.
Cross Listing: POSC 614 and NFSC 614.

VTMI 615 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; theoretical immune surveillance and vaccine development.
Prerequisite: Graduate classification; GENE 320/BIMS 320 and VTPB 409, or equivalent, or approval of instructor.

VTMI 619 Molecular Methods for Microbial Characterization
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Underlying principles of molecular methods for microbial detection and characterization in natural and man-made ecosystems; emphasis on method application and data interpretation; emphasis on microbial pathogens and indicator organisms in foods and environment; laboratory covers select protocols.
Prerequisite: NFSC 326/ANSC 326; SCSC 405; POSC 429; approval of instructor.
Cross Listing: SCSC 619, NFSC 619 and POSC 619.

VTMI 626 Disease Detection, Surveillance and Risk Assessment
Credits 4. 3 Lecture Hours. 2 Lab Hours.
Animal health and food safety diagnostic test evaluation, disease surveillance design and analysis and quantitative risk assessment.
Prerequisites: STAT 651 or equivalent, or approval of instructor.

VTMI 629/SCSC 629 Laboratory Quality Systems
Credits 3. 3 Lecture Hours.
Quality systems and method development used within a laboratory; ensuring the integrity of procedures used in lab processes, chain of custody, information management, and international laboratory standards; regulatory requirements for laboratory operation; bio-security precautions; laboratory management.
Cross Listing: SCSC 629/VTMI 629.

VTMI 631 Wildlife Diseases
Credits 3. 3 Lecture Hours.
Overview of diseases that affect populations of wild mammals, birds, amphibians and reptiles; emphasis on diseases that are transmissible to humans or domestic animals and those found in Texas.

VTMI 643 Pathogenic Bacteriology I
Credits 4. 3 Lecture Hours. 4 Lab Hours.
Pathogenic bacteria, their cultural and biological characteristics and pathogenicity.
Prerequisite: Minimum of 8 hours of undergraduate microbiology.

VTMI 645 Host-Agent Interaction
Credits 3. 3 Lecture Hours.
Basic concepts of infection versus disease; molecular approaches to problems in microbiology; inducible host responses, agent escape mechanisms and movement of potential pathogens in the ecosystem.
Prerequisite: GENE 431/BICH 431 or equivalent.

VTMI 647 Virology
Credits 3. 3 Lecture Hours.
Virus infections of animals and humans; introductory material includes virus replication cycle, taxonomy and methods to study viruses.
Prerequisite: VTPB 438 or equivalent; or approval of instructor.

VTMI 649/POSC 649 Immunology
Credits 3. 3 Lecture Hours.
Cellular basis of the immune response; relationships between inflammation and acquired immunity, MHC and cell activation; the role of cytokines in immunoregulation and hypersensitivity; vaccines, and the mechanism of immunity to viruses, bacteria and parasites.
Prerequisite: VTPB 409 or equivalent.
Cross Listing: POSC 649/VTMI 649.

VTMI 650/POSC 660 Experimental Immunology
Credits 4. 3 Lecture Hours. 3 Lab Hours.
Familiarization, development and integration of techniques into experimental design of immunologic investigation; antibody production, protein purification, immunofluorescence, agar-gel diffusion, immunoelectrophoresis and specialized serologic tests.
Cross Listing: POSC 660/VTMI 650.

VTMI 662 Advanced Immunologic Concepts
Credits 1 to 5. 1 to 5 Lecture Hours.
Modular course with detailed discussions, workshops and assigned reading/problem solving on advanced topics; structural organization of molecules; genetic regulation; cytokine cascades; pathophysiology of autoimmunity. May be repeated for credit.
Prerequisites: VTMI 649/POSC 649; BICH 603 or equivalent; approval of instructor.
VTMI 663/MPIM 663 Molecular Biology of Viruses
Credits 3. 3 Lecture Hours.
In-depth studies of the biochemistry and the replication strategies of viruses and molecular mechanisms of pathogenesis for selected viral systems.
Prerequisite: Graduate classification in pathology, molecular biology, biochemistry, or approval of instructor.
Cross Listing: MPIM 663/VTMI 663.

VTMI 664 Mammalian Genome Modification for Biomedical Research
Credits 3. 3 Lecture Hours.
Reviews the uses of genetic manipulation in biomedical research and provides a working knowledge of the various strategies used to modify mammalian genomes including transgenes, homologous recombination, gene-trapping, RNA interference, cloning, and gene therapy.

VTMI 665 Viral Vectors and Gene Therapy
Credits 3. 3 Lecture Hours.
Describes various viral vector systems, their development and their use as research tools in biotechnology and gene therapy; consists of a mixture of short lectures and discussion of papers from the literature.
Prerequisites: VTMI 663/MPIM 663, VTMI 647, PLPA 616, or PLPA 620 or approval of instructor.
Cross Listing: MPIM 665 and PLPA 665.

VTMI 681 Seminar
Credit 1. 1 Lecture Hour.
Review and discussion of current scientific work and research in field of microbiology and related subjects.
Prerequisite: Approval of instructor.

VTMI 685 Directed Studies
Credits 1 to 4. 1 to 4 Other Hours.
Problems course in microbiology.
Prerequisite: Approval of instructor.

VTMI 689 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours.
Selected topics in an identified area of veterinary microbiology. May be repeated for credit.
Prerequisite: Approval of instructor.

VTMI 691 Research
Credits 1 to 23. 1 to 23 Other Hours.
Research for thesis or dissertation.