

PATHOLOGY, MICROBIOLOGY, & IMMUNOLOGY (PMI)

School of Veterinary Medicine

PMI 099 – Special Study for Undergraduates (1-5 units)

Course Description: Special study for undergraduates.

Prerequisite(s): Consent of instructor.

Learning Activities: Variable 3-15 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Pass/No Pass only.

PMI 126 – Fundamentals of Immunology (3 units)

This version has ended; see updated course, below.

Course Description: Overview of immunology including components of the immune system, initiation and regulation of the immune response, infection and immunity, hypersensitivity and immune dysfunction. Clinical immunologic techniques, immunodeficiency, and vaccinology.

Prerequisite(s): BIS 102; or equivalent, or consent of instructor.

Learning Activities: Lecture 3 hour(s).

Grade Mode: Letter.

PMI 126 – Fundamentals of Immunology (3 units)

Course Description: Fundamental concepts of immunology including components of the immune system, initiation and regulation of the immune response, infection and immunity, allergy and hypersensitivity, autoimmunity, and transplantation.

Prerequisite(s): BIS 102 or BIS 105 or ABI 102; or equivalent, or consent of instructor.

Learning Activities: Lecture 3 hour(s).

Cross Listing: APC 126.

Grade Mode: Letter.

This course version is effective from, and including: Spring Quarter 2026.

PMI 126L – Immunology Laboratory (2 units)

Course Description: Laboratory procedures in clinical immunology.

Cells of the innate and adaptive systems. Quantitative and qualitative characterization of the immune response.

Prerequisite(s): PMI 126 (can be concurrent); or equivalent.

Learning Activities: Laboratory 6 hour(s).

Grade Mode: Letter.

PMI 127 – Medical Bacteria & Fungi (3 units)

Course Description: Introduction to the bacterial and mycotic pathogens of man and animals, with emphasis on pathogenic mechanisms and ecologic aspects of infectious disease.

Prerequisite(s): Any Microbiology course with lab; Immunology strongly recommended.

Learning Activities: Lecture 3 hour(s).

Enrollment Restriction(s): Pass One open to Microbiology majors.

Grade Mode: Letter.

PMI 128 – Biology of Animal Viruses (3 units)

Course Description: 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.

Prerequisite(s): BIS 102.

Learning Activities: Lecture 3 hour(s).

Credit Limitation(s): Only 2 units of credit given if completed MIC 162.

Grade Mode: Letter.

PMI 129Y – One Health: Human, Animal & Environment Interfaces (3 units)

Course Description: 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.

Learning Activities: Lecture/Discussion 3 hour(s), Web Electronic Discussion.

Enrollment Restriction(s): Limited to upper division undergraduate students in good standing and who fulfill the course prerequisites; limited to 100 students/term.

Grade Mode: Letter.

General Education: Science & Engineering (SE) or Social Sciences (SS); Oral Skills (OL); Scientific Literacy (SL).

PMI 198 – Directed Group Study (1-5 units)

Course Description: Directed group study.

Prerequisite(s): Consent of instructor.

Learning Activities: Independent Study 3-5 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Pass/No Pass only.

PMI 199 – Special Study for Advanced Undergraduates (1-5 units)

Course Description: Special study for advanced undergraduates.

Learning Activities: Variable 3-15 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Pass/No Pass only.

PMI 200 – Research Foundations (1 unit)

Course Description: Introduction to key components of graduate school success including mentor/mentee relationship issues, avoiding plagiarism, hypothesis development and experimental design, demystifying the grant writing process, understanding the NIH administrative structure, preparing for a non-academic career, and strategies to maintain a work-life balance.

Prerequisite(s): Consent of instructor.

Learning Activities: Seminar 1 hour(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PMI 201 – Integrative Pathobiology Core I (5 units)

Course Description: Overview of molecular biology techniques, tissue structure and function, cell membrane pathology and cellular mechanisms of disease including cellular responses and adaptations to stress, cell cycle, cell death, cell biomechanics, vascular disturbances, and mechanisms of neoplasia and tumorigenesis.

Learning Activities: Lecture 3 hour(s), Discussion 2 hour(s).

Grade Mode: Letter.

PMI 202 – Integrative Pathobiology Core II (4 units)

Course Description: The second required core course in the graduate group with topics in inflammation, host-pathogen interaction, regenerative medicine, integrative pathology and population and ecosystem health.

Learning Activities: Lecture 2 hour(s), Discussion 2 hour(s).

Grade Mode: Letter.

PMI 203 – Experimental Design & Data Analysis in Pathobiology (2 units)

Course Description: Follows two required core courses, PMI 201 & PMI 202, for Ph.D. and M.S. students. Goal is to bridge gap between statistics and real-world pathobiology to increase students' skills and independence in experiment design and data analysis.

Prerequisite(s): Consent of instructor.

Learning Activities: Lecture 1 hour(s), Lecture/Lab 2 hour(s).

Grade Mode: Letter.

PMI 214 – Vector-borne Infectious Diseases: Changing Patterns (2 units)

This version has ended; see updated course, below.

Course Description: Vector-borne infectious diseases especially as they relate to changing patterns associated with climatic changes, trade and population movement.

Prerequisite(s): Open to graduate students, MPVM and MPH students, DVM and medical students with second- or third-year standing; open to upper division undergraduate students with consent of instructor(s).

Learning Activities: Lecture/Discussion 2 hour(s).

Grade Mode: Letter.

PMI 214 – Biology of Arthropod-Borne Pathogens (2 units)

Course Description: Overview of the biology of major vector borne pathogens across the world.

Learning Activities: Lecture/Discussion 2 hour(s).

Enrollment Restriction(s): Open to graduate students, MPVM and MPH students, DVM and medical students with second- or third-year standing; open to upper division undergraduate students with consent of instructor(s).

Grade Mode: Letter.

This course version is effective from, and including: Spring Semester 2026.

PMI 221 – Topics in Virus Research (1 unit)

Course Description: Discussion-based seminar covering graduate student virology research. Informal presentations and discussion of technical problems in research design and experimentation are encouraged.

Current stage of the research project is not important.

Prerequisite(s): Graduate student standing (Ph.D. or M.S.).

Learning Activities: Discussion 1 hour(s).

Enrollment Restriction(s): Restricted to 10 students.

Repeat Credit: May be repeated 4 time(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PMI 270 – Advanced Immunology (3 units)

Course Description: Current concepts of immunology with an emphasis on interactions between the host, the environment and the pathogen. These interactions will include those that are protective and successful for the host as well as those that are deleterious.

Prerequisite(s): Introductory course in Immunology.

Learning Activities: Lecture 2 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Restricted to graduate student status in the Comparative Pathology Graduate Group; all other students require consent of instructor.

Grade Mode: Letter.

PMI 290 – Seminar (1 unit)

Course Description: Topics in pathology, microbiology or immunology.

Prerequisite(s): Graduate level standing.

Learning Activities: Seminar 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PMI 293A – Seminar in Infectious Diseases (1 unit)

Course Description: Discussion of current topics and cases of infectious diseases.

Prerequisite(s): Current enrollment in health science professional school or graduate standing in biological sciences.

Learning Activities: Seminar 1 hour(s).

Repeat Credit: May be repeated 1 time(s) when topic differs.

Grade Mode: Satisfactory/Unsatisfactory only.

PMI 298 – Group Study (1-5 units)

Course Description: Group study.

Prerequisite(s): Consent of instructor.

Learning Activities: Variable 3-15 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PMI 299 – Research (1-12 units)

Course Description: Research.

Prerequisite(s): Consent of instructor; graduate standing.

Learning Activities: Variable 3-36 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.