MICROBIOLOGY AND IMMUNOLOGY (MI)

MI 5131. Introduction to Immunology. 1 Clock Hour.
Prerequisites: None This course will provide an introduction to immunology by stressing the fundamental concepts of the immune system and the response to microbial infection. Immunologic principles will also be applied to the study of allergy, tumor immunology
Course Type: Lecture

MI 5211. Microorganisms as Infectious Agents Laboratory. 1 Clock Hour.
Prerequisites: PHSC 5561 General Principles of Pharmacology. Introduce topics on drug metabolism and transporters that are important for drug disposition, drug-drug interaction (DDIs) and toxicities; describe contemporary methodologies in studying drug metabolism and transporters; provide hands-on training of Simcyp Simulator software to predict drug disposition and DDIs in humans. (F I, II, III)
Course Type: Lecture

MI 5321. Microbiology I. 1 Clock Hour.
Prerequisites: GPIBS Core Curriculum and concurrent enrollment in MI 6031 or instructor permission. This is the first of three courses that covers fundamental concepts in microbiology such as microbial communities, bacterial genetics and physiology, signaling, and virulence. (SP I)
Course Type: Lecture

MI 5610. Topics in Infectious Disease. 1-6 Clock Hours.
Prerequisites: None. May be repeated, maximum 6 credit hours. Microbiological aspects of selected areas of infectious diseases will be studied in depth. Discussion periods of one to four hours duration per week on infectious disease. Topics will be led by selective graduate faculty members.
Course Type: Independent Study

MI 5971. Seminar. 1 Clock Hour.
Prerequisites: Completed qualifying exam May be repeated; maximum credit 4 hours. Each graduate student in the department must present seminars based on their research. This course is designed to provide students with experience in teaching, public speaking, and communication of scientific thought and data.
Course Type: Lecture

MI 5980. Research for Master's Thesis. 1-4 Clock Hours.
May be repeated; maximum credit 4 hours. Research for Master's Thesis
Course Type: Independent Study

MI 5990. Special Studies. 1-6 Clock Hours.
Prerequisites: None. May be repeated, multiple enrollment in the same semester, maximum credit 12 hours. Investigation of some problems in microbiology or immunology. Introduction to research methods including survey of literature, analysis of data, and preparation of material for presentation.
Course Type: Independent Study

MI 6011. Immuno-Oncology. 1 Clock Hour.
Prerequisites: Admission to the GPIBS program or permission of instructor. Recent years have seen remarkable advances in immunotherapy for cancer. We will analyze the distinct nature of tumor cells and how the immune system can be exploited for elimination of neoplastic cells.
Course Type: Lecture

MI 6031. Immunology I. 1 Clock Hour.
Prerequisites: GPIBS core curriculum and concurrent enrollment in MI 5321 or instructor permission. This is the first of two courses that covers fundamental concepts in immunology. Topics include the development, structure, and function of the immune system, innate immunity, antigen recognition, generation of antigen receptors, and antigen presentation. (SP I)
Course Type: Lecture

MI 6041. Immunology II. 1 Clock Hour.
Prerequisites: GPIBS core curriculum, MI 6031, and concurrent enrollment in MI 6301 or instructor permission. This is the second of two courses that covers fundamental concepts in immunology. Topics include humoral and cell-mediated immunity, mucosal immunity, and failures of the immune system such as allergy and autoimmunity. (SP I)
Course Type: Lecture

MI 6101. Immunology Journal Club. 1 Clock Hour.
This course is designed to teach students to critically evaluate the current literature in Immunology. In addition, they will gain an in depth knowledge of the current state of the field through their exposure to the most current literature in the field.
Course Type: Lecture

MI 6111. Immunology III. 1 Clock Hour.
Prerequisites: Immunology I and II and concurrent enrollment in MI 6501 or instructor permission. This is the third of three courses that covers fundamental concepts in immunology. Topics include humoral immunity, integration of innate and adaptive immunity, mucosal immunity, and vaccines. (Spring I)
Course Type: Lecture

MI 6301. Microbiology II. 1 Clock Hour.
Prerequisites: GPIBS core curriculum, MI 5321, and concurrent enrollment in MI 6041 or instructor permission. This is the second of three courses that covers fundamental concepts in microbiology such as antimicrobial resistance as well as the physiology and pathogenesis of fungi and parasites. (SP I)
Course Type: Lecture

MI 6321. Molecular Virology. 1 Clock Hour.
Prerequisites: GPIBS Core Curriculum or Permission of Instructor. This module will focus on developing a basic knowledge of viral structure, tropism, receptor interactions, replication programs, transformation, evolution, antiviral vaccines and viral immune counter measures. (Sp I)
Course Type: Lecture

MI 6401. Bioinformatics Introduction. 1 Clock Hour.
Prerequisites: First-year required GPIBS courses, and permission of the instructor. This course explores bioinformatics methods and their applications to current questions in biomedical sciences. The course will provide instruction and insight into computational solutions for addressing specific biological problems, emphasizing commonly used software tools and the application of these tools to specific problems. (Summer I)
Course Type: Lecture

MI 6501. Microbiology III. 1 Clock Hour.
Prerequisites: GPiBS core curriculum, MI 5321, MI 6301, MI 6031, MI 6041 or instructor permission. This is the third of three courses that covers fundamental concepts in microbiology such as basic knowledge of viral structures and pathogenesis and emerging pathogens. (SP I)
Course Type: Lecture

MI 6604. Scientific Grant Writing. 4 Clock Hours.
Prerequisites: First-year courses, concurrent enrollment in MI 6822 or instructor permission. This course emphasizes the fundamental concepts in scientific grant writing through critical analyses of grant proposal via participation in a mock study section and completion of a qualifying exam pre-proposal. (Fall II)
Course Type: Lecture

MI 6822. Infection and Immunity. 2 Clock Hours.
Prerequisites: Second-year student and concurrent enrollment in MI 6604 or instructor permission. Students will analyze advances in microbial pathogenesis and host immune responses in the context of contemporary literature. (Fall II)
Course Type: Lecture

MI 6980. Research for Doctor's Dissertation. 1-16 Clock Hours.
May be repeated; maximum credit 21 hours. Research for Doctor's Dissertation
Course Type: Independent Study

MI 8300. Microbiology and Immunology. 94 Clock Hours.
All aspects of microbiology and immunology. Laboratories present basic skills in microbial techniques and introduce students to examination of pathological specimens.
Course Type: Lecture

MI 9980. Special Studies. 1-320 Clock Hours.
Elective. May be repeated with change of subject matter. Topics of special nature or of unusual interest to the individual student.
Course Type: Independent Study