MEDICAL MICROBIOLOGY AND IMMUNOLOGY (M M & I)

M M & I 301 — PATHOGENIC BACTERIOLOGY
2 credits.

Lectures on medically important bacteria, emphasizing the process of pathogenesis and host/parasite interactions, as well as intervention strategies, immunity and genetics as they apply to the pathogens. Open to non-majors. Enroll Info: None
Requisites: (BIOCORE 381 and 382) or (ZOOLOGY/BIOLOGY 101 and 102) or ZOOLOGY/BIOLOGY/BOTANY 152
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 302 — MEDICAL MICROBIOLOGY LABORATORY
3 credits.

Lab covering procedures and aseptic techniques for isolation and identification of pathogenic microorganisms (bacteria, fungi, and viruses). Enroll Info: 2 sem intro biol w/lab or Biocore series 301-304; prev or con req in MMI 301 or equiv
Requisites: None
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 341 — IMMUNOLOGY
3 credits.

Lecture, discussion. An introduction to the immune response to infectious disease. Examines the role of the host in host-parasite relationships using select microbial agents or antigens to illustrate the nonspecific and specific mechanisms of host defenses. Includes study of the nonspecific inflammatory response, the nature of microbial antigens, current concepts of antibody and cell-mediated immune reactions to infectious agents and the principles underlying the development of vaccines. Enroll Info: HS biol, chem, 1 sem of college biol; So st; to receive cr for both MMI 341 528, MMI 341 must be completed first
Requisites: Sophomore standing
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I/ENTOM/PATH-BIO/ZOOLOGY 350 — PARASITOLOGY
3 credits.

The biology of water-borne, food-borne, soil-borne and vector-borne parasites of animals including humans. Parasites are explored in the context of transmission, associated disease, diagnosis and treatment options, and environmental, cultural and socioeconomic drivers of disease epidemiology. Enroll Info: None
Requisites: ZOOLOGY/BIOLOGY 101 and 102, or ZOOLOGY/BIOLOGY/BOTANY 152 or ZOOLOGY 153, or BIOCORE 381
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 410 — MEDICAL MYCOLOGY
2 credits.

Lectures and discussions. Pathogenesis, molecular biology, host-parasite interactions, immunology, epidemiology, and diagnosis of systemic, subcutaneous, and superficial fungal infections. Enroll Info: 2 sem intro biol w/lab or Biocore series 301-304; a crse in immunology or cons inst
Requisites: None
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015

M M & I 460 — TECHNIQUES IN DNA SCIENCE FOR MICROBIOLOGISTS
3 credits.

Introduction to recombinant DNA techniques commonly used in prokaryotic research and clinical Microbiology laboratories. Topics include DNA isolation, agarose gel electrophoresis, restriction enzyme digestion of DNA, ligation, transformation, Southern blotting and PCR. Students are required to work independently. Enroll Info: Junior standing, CHEM 327 or CHEM 329 or CHEM 116, Microbiology lecture and lab, and consent of instructor
Requisites: None
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2013

M M & I/PATH-BIO 528 — IMMUNOLOGY
3 credits.

Development and functions of immune response in animals; a comprehensive study of experimental humoral and cellular immunity. Enroll Info: Two sem chem and one sem zoology or gen biology
Requisites: None
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2019
M M & I 554 — EMERGING INFECTIOUS DISEASES AND BIOTERRORISM
2 credits.

Identification of analysis and solution of emerging infectious disease problems and the problems of bioterrorism. Enroll Info: None
Requisites: Completion of BIOLOGY/BOTANY/ZOOLOGY 152 or ZOOLOGY/BIOLOGY 101 or BIOCORE 383 and MM&B 301 or Microbiology 101 or Microbiology 303; or Grad standing; or consent of instructor.
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 555 — VACCINES: PRACTICAL ISSUES FOR A GLOBAL SOCIETY
3 credits.

Considers innovative approaches to the development and use of vaccines in the past, today and in the future, including the public health impact and the economic, ethical and safety issues associated with vaccine development, licensing and use. Enroll Info: Senior or Graduate standing; MMI 341 or MMI 528
Requisites: None
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I/BIOCHEM 575 — BIOLOGY OF VIRUSES
2 credits.

Lecture-discussion. Broad coverage of animal virology taught at molecular level. Topics include virus structure, viral replication/lifecycle, aspects of pathogenesis and prevention. Enroll Info: Biocore 301/302, or AP score of 4 or 5 and ZOOLOGY/BIOLOGY/BOTANY 151 or 152; or MMI 301
Requisites: None
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I/BOTANY/GENETICS/PL PATH 655 — BIOLOGY AND GENETICS OF FUNGI
3 credits.

Fungal genetics, genomics, and physiology using plant pathogenic fungi and the genetic models Aspergillus nidulans and Neurospora crassa as model systems to explore the current knowledge of fungal genetics and plant/fungal interactions. Enrollment open to graduate students, but undergraduates welcome to contact instructor for permission. All students should have some prior coursework in genetics (such as GENETICS 466 or 467) and microbiology (such as MICROBIO 303). It is also recommended that students take PL PATH 300 332 prior to this course. Enroll Info: Graduate or professional standing
Requisites: None
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2018

M M & I 677 — ADVANCED TOPICS IN MEDICAL MICROBIOLOGY
1-3 credits.

Lectures on a specialized topic of current interest in medical microbiology. Course content will vary with instructor. Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2018

M M & I 691 — FIRST SEMESTER SENIOR THESIS
3 credits.

First semester independent study with the goal to do the preliminary research to write a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 692 — SECOND SEMESTER SENIOR THESIS
3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 693 — SUMMER SENIOR THESIS
3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 694 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 695 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 696 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 697 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 698 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I 699 — SPECIAL INDEPENDENT STUDY IN MEDICAL MICROBIOLOGY
1-3 credits.

Second semester independent study with the goal to complete a senior thesis in Medical Microbiology Immunology. Enroll Info: Senior Standing; Consent of Instructor, MMI 691
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020
M M & I 696 — CRITICAL THINKING IN MEDICAL MICROBIOLOGY AND IMMUNOLOGY
3 credits.

Students will present assigned research papers from journals for critical evaluation by the class. In addition, students will write critiques of each paper evaluating the paper’s introduction, methods, results, and discussion sections. Enroll Info: MMI 301 341, or cons inst
Requisites: None
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2019

M M & I 699 — DIRECTED STUDY
1-3 credits.

Enroll Info: None
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2020

M M & I 704 — INFECTIOUS DISEASES OF HUMAN BEINGS
3 credits.

Pathogenesis, clinical descriptions, and prevention. Primarily for Physician Assistant, Pharmacy, and Nursing students. Enroll Info: A course in microbiology
Requisites: MICROBIO 101 or MICROBIO 303; not open to students declared in Medical Microbiology and Immunology program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 740 — MECHANISMS OF MICROBIAL PATHOGENESIS
3 credits.

Lecture-discussion. Host-pathogen relationships in microbial diseases. Entry level course for infectious diseases sequence (see Med Micro 760, 790). Enroll Info: Cons inst, MMI 301 or equiv a course in immunology
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 740 — MECHANISMS OF MICROBIAL PATHOGENESIS
3 credits.

Lecture-discussion. Host-pathogen relationships in microbial diseases. Entry level course for infectious diseases sequence (see Med Micro 760, 790). Enroll Info: Cons inst, MMI 301 or equiv a course in immunology
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I 750 — HOST-PARASITE RELATIONSHIPS IN VERTEBRATE VIRAL DISEASE
3 credits.

Lecture. Detailed study of the pathogenesis of vertebrate viral disease, stressing viral invasion, dissemination, mechanisms of disease production and resistance, and transmission. Enroll Info: Oncol/Microbio 640 or PATH-BIO 513; and Microbio/MMI/PATH-BIO/MMI & I 528; or consent of instructor
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2020

M M & I/PATH-BIO 755 — FOUNDATIONS OF MEDICINE 2
3 credits.

Addresses the basic principles of medical microbiology and the infectious diseases involving the cardiovascular, respiratory, renal and dermatologic systems and related any-microbial therapies. Enroll Info: Standing as med 2 student (completion of year 1 Medical School curriculum)
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

M M & I/PATH-BIO 773 — EUKARYOTIC MICROBIAL PATHOGENESIS
3 credits.

An advanced course focusing on the molecular, cellular and biochemical mechanisms found in fungal and protozoan pathogens of humans. A combination of lectures and student presentations will be employed. Enroll Info: Cons inst. MMI 740 PATH 750 recommended
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2012
M M & I/PATH-BIO 790 — IMMUNOLOGY OF INFECTIOUS DISEASE
3 credits.

Immunobiology and immunogenetics of resistance to infectious disease agents of man and animals; immunoregulatory mechanisms associated with evasion of host immunity. Enroll Info: MMI 720 or equiv, MMI 740 or equiv, cons inst
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2015

M M & I 900 — JOURNAL CLUB
1 credit.

Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2012

M M & I 901 — SEMINAR
1 credit.

Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2020

M M & I 902 — THE ROLE OF THE HUMAN MICROBIOME IN HEALTH AND DISEASE
2 credits.

The human microbiome can profoundly influence the balance between health and disease. Advances in next-generation sequencing technology and bioinformatics enabled the detailed study of the trillions of microorganisms living in us and on us and their associations with both healthy and disease conditions. In this basic science selective, students will learn current state of the art approaches to study the microbiome through examples of human diseases with a known microbiome component. Students will enhance their ability to critically assess the microbiome literature and design clinical studies aiming to include the microbiome as a variable. They will learn the bioinformatics tools required to study complex microbial communities by reproducing published datasets from human patients and learn ecological concepts to interpret results in a clinically meaningful way. Enroll Info: None
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2020

M M & I 911 — MICROBIOLOGY DIAGNOSTICS IN PUBLIC HEALTH
2 credits.

This immersion training in Public Health Microbiology allows medical students to learn firsthand how a public health lab handles testing. Students will learn about the different areas of testing in the lab from the experts and how we work with the CDC and clinical labs for surveillance, diagnostics, and outbreak response. This training will be useful for those interested in diagnostic testing and those that will order these tests in their practice. Enroll Info: None
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

M M & I/BIOCHEM/BMOLCHEM 914 — SEMINAR-MOLECULAR BIOSCIENCES (ADVANCED)
1 credit.

During the fall semester, molecular biosciences trainees who have not achieved dissertator status will present seminars based primarily on literature related to their projects. During the spring semester, molecular biosciences trainees with dissertator status will present seminars based upon their own research. Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2020

M M & I 990 — RESEARCH AND THESIS
1-12 credits.

Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2020