

MICROBIOLOGY (MB)

MB 1580 - Basic Microbiology

0 or 3 Credits

MB 4980 - Advanced Independent Study in Microbiology

1-3 Credits (Repeatable for credit)

MB 5310 - Introduction to Research Techniques and Topics

1-3 Credits

All students within the first year of their graduate programs spend a minimum of six weeks doing a research project with each of three or more faculty members. Projects are designed to acquaint the student with a specific line of research and to help them learn techniques and develop new research skills.

MB 5950 - Special Study for Exams

0-1 Credits (Repeatable for credit)

MB 5990 - Thesis Research

0-6 Credits (Repeatable for credit)

MB 6240 - Advanced Topics in Immunology

1-3 Credits

This course entails a discussion of research publications focused on topics of current importance in molecular and cellular immunology. These may include recombination in the Ig and TCR loci; signal transduction coupled to antigen and cytokine receptors; molecular aspects of intracellular pathways in antigen processing; ligand-receptor interactions in cell-cell communications; chemokine and cytokine networks and infection; role of T cell subsets in host defense mechanisms; and immune mechanisms in pathogenesis of infectious disease. (Offered every semester)

MB 6350 - Virology

0-3 Credits

A basic course in animal and human virology dealing with the structure, composition, replication, assay and identification of viruses which infect eukaryotic cells. Molecular aspects of pathogenesis: immunological, inflammatory, and cellular responses to viruses including interferons and cytokines, viral interference, acute versus persistent infections, slow virus disease, strategies for vaccine development, and concepts in antiviral therapy. Adenoviruses, papillomaviruses, herpesviruses, and retroviruses will be discussed primarily in MB 6500. (Offered every other year)

MB 6400 - Biological Safety Microbiology for the Research Scientist

3 Credits

This course will provide an overview of the field of biological safety microbiology and its application to the control of biohazards in a wide variety of settings for students at all levels who are interested in the epidemiology of microbial diseases. Students will review biohazards associated with occupational laboratory acquired infections, and examine select case studies to identify critical biosafety mishaps. The role of public opinion and media will be discussed as a continuous thread throughout the course. The course will teach participants how to perform a comprehensive qualitative risk assessment for biohazards and learn how to employ the control strategies to appropriately manage these risks. Course concepts can be applied to the control of biohazards, along with emphasizing protective measures when addressing incidents involving biohazards. In addition, coverage of the Select Agent Program and the additional security practices entailed with research will be covered.

MB 6500 - Advanced Tumor Virology

3 Credits

An advanced course dealing with the biological, biochemical, and physical properties of oncogenic DNA and RNA tumor viruses, their modes of interaction with cells, and the molecular events of host chromosomes. Lecture topics will include the role of viral and cellular oncogenes in cell transformation, tumorigenesis and normal growth control. The role of DNA tumor viruses and retroviruses, including human immunodeficiency virus (AIDS), as tools to investigate the mechanism of DNA replication, gene expression, and growth control in eukaryotic cells will be presented. Offered every other year.

MB 6650 - Basic Immunobiology

0-3 Credits

A beginning graduate level course which deals with fundamental concepts in both molecular and cellular immunology. Topics include antigen recognition structures; antigen processing and the major histocompatibility (MHC) locus; lymphocyte activation; cytokines; T and B cell development; cell-cell interaction in the immune response; and host immune responses in autoimmunity and infection. Emphasis on experimental approaches and some review of current literature. Offered every other year.

MB 6750 - Immunology Journal Club

2 Credits

An advanced topics literature survey. Current topics in the molecular aspects of antigen recognition, antigen presentation, cell-cell interactions in immune systems, and signal transduction in lymphocytes and macrophages. Offered every spring semester.

MB 6820 - Advanced Topics in Virology and Cell Biology

1-3 Credits

This course is taught by one or more of the faculty in the program. Students meet with the instructor one to three times per week to discuss and analyze a research topic in virology or the relationship between viruses and their host cells. Material is taken from research papers published in leading research journals, with supporting information from graduate-level textbooks. Topics for the course are selected by the faculty of the molecular microbiology and immunology program. (Offered every semester)

MB 6900 - Microbiology Journal Club

0-1 Credits (Repeatable for credit)

Attendance and participation required of all graduate students, every semester that they are in the program. Students, postdoctoral trainees, and Faculty report on important research which has recently been published in the biomedical literature. Each student presents at least once per semester.

MB 6920 - Microbiology Colloquium

0-1 Credits (Repeatable for credit)

Advanced doctoral students meet with instructor to analyze and discuss a specific research. Reference materials are articles/reports from the current research literature.

MB 6950 - Special Study for Exams

0 Credits (Repeatable for credit)

MB 6970 - Advanced Research Topics in Microbiology

1 or 2 Credits

This is an advanced topics course taught by any one of the Faculty in the Department. It is designed for a class of several students who meet with the instructor once a week to discuss and analyze a research topic. Material is taken from current research papers published in leading research journals. The topic for the course is announced in the Schedule of Classes.

MB 6980 - Graduate Independent Study in Microbiology

1-3 Credits (Repeatable for credit)

MB 6990 - Dissertation Research

0-6 Credits (Repeatable for credit)