Molecular Mechanisms of Bacterial Pathogenesis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: undergraduate-level courses in microbiology or microbial physiology, immunology and molecular genetics. The goals of this comprehensive course are to explore in detail the virulence mechanisms of microbes and the response of the infected host. The focus will be on important bacterial pathogens.

MICR 618. Molecular Mechanisms of Bacterial Pathogenesis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Cell/molecular biology or permission of instructor. An advanced course on contemporary bioinformatics. Topics covered include the principles and practice of DNA, RNA and protein sequence analysis, computational chemistry and molecular modeling, expression array analysis and pharmacogenomics. The course includes lectures, reading, computer lab, homework problem sets and projects. Crosslisted as: BNFO 653.

MICR 684. Molecular Biology of Cancer. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MICR 515 or equivalent; permission of instructor. Advanced graduate-level course to provide theoretical background to graduate students interested in cancer research. Emphasis will be placed on experimental approach integrating classical and modern methods of genetic analysis with biochemical studies in genetic regulatory mechanisms. The course includes presentations by students and interactive discussion of the scientific literature in the area of oncogenesis.
MICR 686. Advanced Immunobiology. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Open primarily to residents, medical students and graduate students with an immunology background such as MICR 505. Lectures, seminars, conferences on basic and clinical immunobiology and literature review on the topic, with more emphasis on methods in immunology research and exercising the ability to communicate the topic verbally. Topics have included tumor immunology, cell interactions in the immune response, genetics of the immune response, mechanisms of host-defense and membrane receptors in immunology and neoplasia.

MICR 690. Microbiology Research Seminar. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminars.

MICR 691. Special Topics in Microbiology. 1-4 Hours.
Semester course; 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

MICR 692. Current Topics in Molecular Pathogenesis. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Open to all graduate and certificate students. Presents a forum for the discussion of recent advances in the study of the molecular mechanisms of microbial pathogenesis. Consists of presentations by students, postdoctoral fellows and faculty followed by interactive discussions of the implications of presented work to the study of molecular pathogenesis.

MICR 693. Topics in Molecular Biology and Genetics. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Open to all graduate students. Presents a forum for discussion of the scientific literature in the area of molecular biology and genetics, focusing on molecular mechanisms involved in regulation of gene expression and cell growth with examples from all three kingdoms of life. Consists of presentations by students and interactive discussions of the implications of presented work to the study of molecular biology.

MICR 694. Current Topics in Immunology. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Open to all graduate students. Presents a forum for discussion of the scientific literature in the area of cellular and molecular immunology, focusing on mechanisms involved in the operation and regulation of the vertebrate immune system. Consists of presentations by students and interactive discussions of the implications of presented work to the study of immunology.

MICR 695. Special Topics in Microbiology. 1-4 Hours.
Semester course; 1-4 variable hours. 1-4 credits. Lectures, tutorial studies, library assignments in selected areas of advanced study or specialized laboratory procedures not available in other courses or as part of the research training. Graded as S/U/F.

MICR 697. Directed Research in Microbiology. 1-15 Hours.
Semester course; 1-15 credits. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.