

# ME.300 (PATHOLOGY)

## Courses

### ME.300.699. Pathology Elective.

### ME.300.710. Pathobiology and Disease Mechanisms. 3 Credits.

Pathobiology and Disease Mechanisms provides an intensive study of human disease through traditional lectures, and the discussion of the primary scientific literature including classic and current cutting edge papers. The course combines lectures with small group discussions, and will cover topics relevant to infectious, degenerative, neoplastic, and inflammatory disease of the major organ systems. The primary objective of the course is to understand how research findings elucidate the underlying mechanisms leading to clinical manifestations of disease (seen grossly and microscopically in the traditional Pathology component of the course). Active student participation is required in the form of presenting and discussing papers. The course is open to all PhD and MD/PhD students.

### ME.300.711. Introduction to Translational Research Rotation 1. 1 - 18 Credits.

Introduction to Translational Research is designed to acquaint pre-doctoral students with the language of anatomic pathology and clinical pathology through practical experiences. Students will rotate through surgical pathology and various laboratory services including chemistry, hematology, the blood bank, medical microbiology, and diagnostic immunology. Students will become acquainted with the resources that can be made available to research, and will appreciate the translational relevance of their research to clinical medicine. Open to students in the Graduate Program in Pathobiology and others with permission of the Program Directors.

### ME.300.712. Introduction to Translational Research Rotation 2. 1 Credit.

Introduction to Translational Research is designed to acquaint pre-doctoral students with the language of anatomic pathology and clinical pathology through practical experiences. Students will rotate through surgical pathology and various laboratory services including chemistry, hematology, the blood bank, medical microbiology, and diagnostic immunology. Students will become acquainted with the resources that can be made available to research, and will appreciate the translational relevance of their research to clinical medicine. Open to students in the Graduate Program in Pathobiology and others with permission of the Program Directors.

### ME.300.713. Pathology for Graduate Students: Basic Mechanisms. 3 Credits.

Pathology for Graduate Students: Basic Mechanisms will concentrate on the basic mechanisms of tissue injury and disease both at the molecular level and as they are manifested in human tissues. Normal tissue histology and function will be discussed in relation to organ systems as a basis for the understanding of disease mechanisms. Morning Lectures and discussion groups will be followed by afternoon laboratory and microscopic sessions. Students will dissect and prepare mouse tissues for a histology slide collection that will serve as the basis of some of the microscopic sessions. This block on basic pathogenic mechanisms will prepare students for more advanced topics on organ specific diseases that can be taken individually or in succession. The advanced blocks will be organized under 3 themes: 1) Neoplasia, 2) Immunopathology, and 3) Neuropathology.

### ME.300.714. Pathology for Graduate Students: Cancer. 1 Credit.

Pathology for Graduate Students: Cancer will concentrate on the biology of cancer at the molecular, cellular, and tissue levels. While the course is largely organized to study cancer in the context of specific organs, general principles of neoplasia will be continuously discussed as a basis for understanding the disease process. The format will include lectures, discussion of research papers, and review of histological slides.

### ME.300.715. Pathology for Graduate Students: Neuropathology. 1 Credit.

Pathology for Graduate Students: Neuropathology will concentrate on the basic mechanisms of Neuropathology both at the molecular level and in human diseases. Normal tissue histology and function will be discussed as a basis for the understanding of Neuropathology. Animal models of neuropathological diseases will be critically considered.

### ME.300.716. Pathology for Graduate Students: Immunology/Infectious Disease. 1 Credit.

Pathology for Graduate Students: Immunology and Infectious Disease will concentrate on the basic mechanisms of Immunology and Infection in human diseases. The format will include lectures, discussion of research papers, and review of histological slides.

### ME.300.717. Grant Writing 101. 3 Credits.

The course will explore how to pick a scientific area. Students will write mini-grants in the format of an NIH F31 pre-doctoral award.

### ME.300.800. Pathology Research. 3 Credits.

Long-term research projects will be undertaken with faculty members of the Graduate Program in Pathobiology serving as mentors. Course also covers the three required rotations for 1st years.

### ME.300.802. Teaching in Pathobiology.

Designed to prepare students for teaching through participation as a teaching assistant for Pathobiology required courses.

### ME.300.803. Pathobiology Journal Club. 3 Credits.

This course will seek to train graduate students in the fundamentals and art of understanding and determining the quality and structure of scientific publications. Students will select publications for presentation. Papers will be carefully read and scrutinized for detail of experimental background and logic, experimental approach and methods, results, figure composition and presentation, and interpretation. Students, with advice from a faculty mentor, will prepare and present to an audience a PowerPoint presentation on the selected paper. The course is open to all graduate students and postdoctoral fellows.