

MEDI 450: Fundamental Principles of Pathology

Pathology is the study of disease etiology and progression. It investigates the molecular underpinnings of disease, ultimately leading to the gross appearance of the affected area. Such comprehensive understanding contributes to developing cutting-edge diagnostic testing, treatment recommendations, and preventive care. In Fundamental Principles of Pathology, we will examine both microscopic and gross specimens of diseased tissues and organs, while learning the molecular and physiological etiology of such conditions. As an introductory course, it will showcase the four main foci of pathology: anatomical, clinical, molecular, and oral and maxillofacial pathology, though the main focus will be anatomical pathology. As a core course in many health professions and biomedical research curricula (e.g. medical, physician assistant, physician scientist), it will introduce aspiring students to not only disease etiology, but also diagnostic identification, associated treatments, functional and clinical aspects of disease burden, and potential for targeted preventive care.

Learning Objectives

- Understand the immunological cascade of tissue injury.
- Learn the triggers, aggravators, and facilitators of select congenital, hemodynamic, inflammatory, infectious, metabolic, environmental, and neoplastic diseases.
- Explain the natural history of select diseases • Identify disease stages and associated prognosis from diagnostic imaging.
- Understand the molecular mechanisms of select diseases, their progression, and therapeutic targets.
- Determine the diagnostic investigations (e.g. laboratory, radiological imaging, microscopy) warranted in sample case scenarios.

Credits: 2

Class Type: Graduate Course

Program: Biology, Genetics, and Medicine