The Department of Pathology and Laboratory Medicine offers courses to medical students and undergraduate courses to students in the Medical Laboratory Sciences program (Faculty of Health Sciences). The department also offers four-year residency training programs in pathology and laboratory medicine.

**PATH 229  Pathology**  
108.72; 9 cr.  
Undergraduate teaching of mechanisms of diseases (general pathology) and morphological and pathophysiological aspects of organ diseases (systemic pathology).

**IDTH 221/222  Introduction to Medicine**  
See Department of Internal Medicine.

**PATH 260  Elective in Pathology**  
0.180.  
An elective open to Med IV students. The purpose of this clerkship is to expose the students to the general principles of surgical pathology and cytopathology. The student participates in the daily teaching activities of the department, learns general dissection skills, and attends the sign-out sessions. During the rotation, the student is required to make a presentation on a topic of interest, and encouraged to participate in an investigative research project. One to two months.

**LABM 262  Elective in Laboratory Medicine**  
0.180-360.  
A clerkship offered to Med IV students. This clerkship consists of daily practical training, supplemented by lectures and seminars to cover the disciplines of clinical chemistry, clinical microbiology and immunology, clinical hematology, blood banking and transfusion medicine, molecular diagnostics and cytogenetics. This elective is available in these various disciplines of laboratory medicine and may be adjusted according to the interest of the candidate. During the rotation, the student is required to make a presentation on a topic of interest, and encouraged to participate in an investigative research project. One to two months.

**LABM 287  Internship**  
0.180-360.  
Same as LABM 262. Offered to rotating interns. One to two months.
Clinico-Pathology Conferences
Med III, IV, and staff in collaboration with the departments of Surgery, Internal Medicine, Pediatrics, Obstetrics and Gynecology, Diagnostic Radiology, Ophthalmology, and Otolaryngology—Head and Neck Surgery.

Courses Offered for Medical Laboratory Sciences Students

LABM 201/202  Clinical Chemistry I and II  2.0; 3 cr.
Clinical Chemistry courses I and II are designed to acquaint students with fundamentals of clinical chemistry, including basic physiological and biochemical processes, instrumentation, principles of analytical procedures, and methods used for reliable determination of clinical analytes. Correlation of laboratory results with clinical manifestation is also an integral part of these courses. These courses cover all aspects of routine clinical chemistry such as carbohydrates, electrolytes, acid-base balance, blood gases, nitrogen metabolites, proteins, enzymes, liquids and lipoproteins, calcium metabolism, and liver function. LABM 202 will also include some advanced topics like hormones, therapeutic drug monitoring, toxicology; and specialized techniques like chromatography (HPLC and GC/MS and so on).

LABM 210  Cytology and Histological Techniques  32.0; 2 cr.
A course that includes a series of lectures and demonstrations on cell biology, a review of normal histology of various human organs, a description of examples of pathological changes, lectures on techniques of tissue handling, and preparation and staining of sections and smears for cytological material. *Members of the department and the Department of Human Morphology.*

LABM 220  Clinical Chemistry and Endocrinology  0.128; 4 cr.
Practical experience in clinical chemistry. *Six weeks.*

LABM 230  Clinical Hematology and Reception  0.128; 4 cr.
Practical experience in clinical hematology and reception. *Six weeks.*

LABM 231  Clinical Laboratory Quality Systems  1 cr.
This course is intended to give Medical Laboratory Sciences students a thorough understanding of the quality systems used for implementation of total quality management in the clinical laboratories. The course covers all the basic elements and tools required to implement the quality system essentials across all phases of the laboratory workflow: preanalytical, analytical, postanalytical. In addition, it will include focused lectures related to quality and safety standards required in specialized areas such as blood bank, clinical microbiology, and molecular diagnostics. Practical examples from the laboratory setting will be part and parcel of the lecturers to help students relate theory to practice.

LABM 233  Genetics and Molecular Biology  2.0; 2 cr.
A course that includes an introduction to human genetics, comprising the structure and function of DNA and the classification of genetic disorders, as well as the application of genetic testing in the laboratory and clinical differential diagnosis of variable disorders. Diagnostic techniques in human genetics (cytogenetics, biochemical, and molecular) will be covered, as well as state-of-the-art molecular techniques applied in pathology, oncology, immunology, and microbiology.

LABM 235  Medical Mycology  1.0; 1 cr.
A course that covers the different kinds and types of fungi (yeast and mold). This course discusses their disease spectrum mode of infection, growth requirements, and cultural and non-cultural methods of identifications as well as antifungal drugs and susceptibility testing of fungi.
LABM 240  Clinical Microbiology 0.128; 4 cr.
Practical experience in clinical microbiology (aerobic and anaerobic bacteriology, mycobacteriology, mycology, processing, identification, and susceptibility testing). Six weeks.

LABM 250  Clinical Parasitology and Urinalysis 0.64; 2 cr.
Practical experience in clinical microscopy pertaining to parasitology, urinalysis, spermogram, and occult blood, as well as in the use of different types of microscopic methods for diagnosing particulate material in synovial fluid and others. Prerequisite: MBIM 223. Three weeks.

LABM 260  Serology 0.64; 2 cr.
Practical experience in clinical immunology and serodiagnostic techniques used for the diagnosis of infectious and non-infectious diseases. Three weeks.

LABM 270  Blood Banking 0.64; 2 cr.
Practical experience in blood banking, transfusion medicine and apheresis. Three weeks.

LABM 280  Cytogenetics, Molecular Diagnostics and Histotechniques 0.64; 2 cr.
Practical experience in cytogenetics, molecular diagnostics and histotechniques. Prerequisite: LABM 210. Three weeks.