BACHELOR IN MEDICAL LABORATORY ANALYSIS

Main Language of Instruction:
French ☑ English ○ Arabic ○

Campus Where the Program Is Offered: CSM

OBJECTIVES

The Bachelor in Medical Laboratory Analysis aims to train technicians who conduct analyses on biological samples to diagnose conditions or monitor treatment effectiveness, under the supervision of the laboratory manager.

PROGRAM LEARNING OUTCOMES (COMPETENCIES)

- Developing a professional identity and engaging in training
- Collaborating with various stakeholders within a multidisciplinary team while adhering to ethical and professional standards
- Planning and performing activities specific to the biomedical sciences domain
- Ensuring professional communication

PROGRAM REQUIREMENTS

Required Courses (152 credits), Institution's Elective Courses (11 credits), USJ Elective Courses (11 credits), Open Elective Courses (6 credits).

Required Courses (152 credits)
Analytical Chemistry (1 Cr.). Applied Pathological Anatomy (2 Cr.). Arabic Language and Media (2 Cr.). Bacteriology Internship I (2 Cr.). Bacteriology Internship II (2 Cr.). Bacteriology Internship III (2 Cr.). Biochemistry Internship I (2 Cr.). Biochemistry Internship II (2 Cr.). Cellular Biology (2 Cr.). Clinical Biochemistry (3 Cr.). Computer Science (2 Cr.). Cytogenetics and Molecular Biology Internship (1 Cr.). End of Study Thesis (5 Cr.). Endocrinology (2 Cr.). English (4 Cr.). First Aid (2 Cr.). Fundamental Ethics (3 Cr.). Fundamentals of Pharmacology (2 Cr.). General Biology (2 Cr.). General Chemistry + Practical Work (3 Cr.). General Chemistry Practical Work (1 Cr.). Genetics (3 Cr.). Hematology (3 Cr.). Hematology Internship I (2 Cr.). Hematology Internship II (2 Cr.). Hematology Internship III (2 Cr.). Histology (2 Cr.). Histology Internship (1 Cr.). Hormonology Internship (2 Cr.). Hygiene (2 Cr.). Hydrology (1 Cr.). Immunology + Pathology + Practical Work (4 Cr.). Immunology Internship I (2 Cr.). Immunology Internship II (2 Cr.). Inorganic Chemistry (1 Cr.). Introduction to Public Health (3 Cr.). Laboratory Quality Assurance (1 Cr.). Leadership and Work Ready Now (2 Cr.). Learning Through Clinical Cases (2 Cr.). Mathematics (2 Cr.). Medical Biotechnology (2 Cr.). Medical Laboratory Internship I (1 Cr.). Medical Laboratory Internship II (4 Cr.). Metabolic Biochemistry (4 Cr.). Microbial World (3 Cr.). Molecular Biology + Practical Work (4 Cr.). Organic Chemistry (3 Cr.). Parasitology - Mycology + Practical Work (4 Cr.). Parasitology Internship (2 Cr.). Pathology Anatomy Internship (2 Cr.). Physics (2 Cr.). Positive Communication (2 Cr.). Professional Insertion Internship I + Validation I (3 Cr.). Professional Insertion Internship II + Validation II (5 Cr.). Research Methodology (2 Cr.). Special Microbiology (3 Cr.). Structural Biochemistry (3 Cr.). Statistics (2 Cr.). USJ Values in Daily Life (2 Cr.). Virology (2 Cr.).

Institution's Elective Courses (11 credits)
Care Techniques (2 Cr.). Creativity in Sustainable Development (2 Cr.). Introduction to Food Safety (2 Cr.). Medical Waste Management (1 Cr.). Speaking/Writing for Communication (2 Cr.). Therapeutic Dietetics (2 Cr.).

USJ Elective Courses (11 credits)
Addictive Behaviors and Dependencies (2 Cr.). Communication and Human Relations (2 Cr.). Conflict Management and Resolution (3 Cr.). Health Sociology (2 Cr.). Volunteer and Civic Engagement (2 Cr.).

SUGGESTED STUDY PLAN

Semester 1

Code	Course Name	Credits
435LALML2	Arabic Language and Media	2
041SBACL1	Bacteriology Internship I	2
004BICLL1	Cellular Biology	2
041CUGEL1	Communication and Human Relations	2
041INFOL1	Computer Science	2
004CHGEL1	General Chemistry + Practical Work	3
041TPCGL1	General Chemistry Practical Work	1
004SANEI2	Hygiene	2
004CHIOL1	Inorganic Chemistry	1
004MATTL1	Mathematics	2
041SITLL1	Medical Laboratory Internship I	1
041PHYSL1	Physics	2
041EXCOL1	Speaking/Writing for Communication	2
041STATL1	Statistics	2
004BIOMI2	Structural Biochemistry	3
064VALEL1	USJ Values in Daily Practice	2
	Total	**31**

Semester 2

Code	Course Name	Credits
016GRCOL2	Conflict Management and Resolution	3
004EVENI2	Creativity in Sustainable Development	2
004BIOGL1	General Biology	2
004GENEI1	Genetics	3
004SOLOI2	Health Sociology	2
041SHEML2	Hematology Internship I	2
041HISTL2	Histology	2
041STHIL2	Histology Internship	1
004ANPHL2	Human Anatomy and Physiology I	4
041CORGL2	Organic Chemistry	3
041SIP1L2	Professional Insertion Internship I + Validation I	3
	Open Elective	2
	Total	**29**

Semester 3

Code	Course Name	Credits
041ANGLL3	English	4
041HEMAL3	Hematology	3
041STHEL3	Hematology Internship II	2
004ANAPL3	Human Anatomy and Physiology II	4
004LEMII3	Microbial World	3
004MOLBI3	Molecular Biology + Practical Work	4
004PAMYS1	Parasitology - Mycology + Practical Work	4
041STPML3	Parasitology Internship	2
017CPOSI1	Positive Communication	2
041DITHL3	Therapeutic Dietetics	2
	Total	**30**

Semester 4

Code	Course Name	Credits
041CHANL4	Analytical Chemistry	1
041APAPL4	Applied Pathological Anatomy	2
041SBATL4	Bacteriology Internship II	2
041STBIL4	Biochemistry Internship I	2
005TECSL2	Care Techniques	2
041SCBIL4	Cytogenetics and Molecular Biology Internship	1
004IPEAS2	Immunology + Pathology + Practical Work	4
041STIML4	Immunology Internship I	2
004BIOMS2	Metabolic Biochemistry	4
041SIP2L4	Professional Insertion Internship II + Validation II	5
041MISPL4	Special Microbiology	3
	Open Elective	2
	Total	**30**

Semester 5

Code	Course Name	Credits
004LCADS1	Addictive Behaviors and Dependencies	2
041SBAHL5	Bacteriology Internship III	2
041SHMHL5	Blood Bank Internship	2
004SBLGS3	Clinical Biochemistry	3
041ENDOL5	Endocrinology	2
004SECOS3	First Aid	2
041SHIHL5	Hematology Internship III	2
041SIMML5	Immunology Internship II	2
496IESPM1	Introduction to Public Health	3

041TDSIL5	Learning through Clinical Cases	2
004BITHS1	Medical Biotechnology	2
041SALML5	Medical Laboratory Internship II	4
041CPAML5	Research Methodology	2
	Total	**30**

Semester 6

Code	Course Name	Credits
041STBHL6	Biochemistry Internship II	2
041MMFEL6	End of Study Thesis	5
018ETHFL1	Fundamental Ethics	3
041PHARL6	Fundamentals of Pharmacology	2
041SHORL6	Hormonology Internship	2
004HYDOS2	Hydrology	1
041SEALL6	Introduction to Food Safety	2
041SQLTL6	Laboratory Quality Assurance	1
041LWRNL6	Leadership and Work Ready Now	2
041GRCML6	Medical Waste Management	1
041SAPHL6	Pathological Anatomy Internship	2
041VST3L6	Internship Validation III	1
004VIROS4	Virology	2
015ABC2L3	Volunteer and Civic Engagement	2
	Open Elective	2
	Total	**30**

COURSE DESCRIPTION

004LCADS1 Addictive Behaviors and Dependencies 2 Cr.

This course addresses the currently increasing challenges of drug addiction faced by young individuals.
It is a required course at USJ.
By the end of this course, students should be able to:

- Identify the mechanisms underlying pharma codependence to psychoactive substances.
- Recognize the toxic effects caused by major drugs like cannabis, opioids, cocaine, amphetamines, GHB, among others.
- Examine insights from specialized medical professionals (psychiatrists, emergency physicians) and NGO leaders dedicated to managing and combating drug abuse and addiction in Lebanon.

041CHANL4 Analytical Chemistry 1 Cr.

This course aims to equip students with practical knowledge of quantitative analytical techniques used for analyzing drugs, heavy metals, and pesticides.

041APAPL4 Applied Pathological Anatomy 2 Cr.

This course helps students acquire the knowledge and skills required to participate in technical practices related to anatomical pathology and cytology under the supervision of the supervising physician.

435LALML2 Arabic Language and Media 2 Cr.

This course provides a dynamic exploration of the Arabic language within its cultural context, emphasizing its application in visual, auditory, and written media, including advertising. It aims to equip students with practical linguistic skills, both oral and written, that are directly applicable and beneficial.

041SBACL1 Bacteriology Internship I 2 Cr.

This internship helps students acquire the knowledge and skills necessary to perform microbiological analyses on biological samples.

041SBATL4 Bacteriology Internship II 2 Cr.

This internship aims to study various bacterial families relevant to the medical field and to identify them using rapid techniques, while also examining their sensitivity or resistance to antibiotics.

041SBAHL5 Bacteriology Internship III 2 Cr.

This internship helps students acquire the knowledge and skills necessary to conduct bacteriology laboratory analyses following standardized practices.

041STBIL4 Biochemistry Internship I 2 Cr.

This internship includes:
- Applying methods to measure biochemical constants.
- Familiarizing students with a semi-automatic photometer and an electrolyte measurement device.

041STBHL6 Biochemistry Internship II 2 Cr.

This internship helps students acquire the knowledge and skills necessary to conduct biochemistry laboratory analyses following standardized practices.

041SHMHL5 Blood Bank Internship 2 Cr.

This internship helps students acquire the knowledge and skills in performing analyses in transfusion medicine following standardized transfusion practices.

005TECSL2 Care Techniques 2 Cr.

This internship helps students acquire the knowledge and skills in applying care techniques following safety and quality rules. It enhances competence in "clinical judgment in nursing practice".

004BICLL1 Cellular Biology 2 Cr.

This course examines cellular biology across eight chapters. Chapter one introduces fundamental biological macromolecules: carbohydrates, lipids, proteins, and nucleic acids. Chapter two compares and contrasts various types of cells including eukaryotes, prokaryotes, and acellular organisms. Chapter three delves into the structure and function of cell membranes. Chapter four illustrates the organization of the extracellular matrix. Chapter five explores the nucleus of the eukaryotic cell and the cell cycle. Chapter six focuses on the intracellular membrane network covering the smooth and rough endoplasmic reticulum, Golgi apparatus, lysosomes, and vacuoles. Chapter seven studies the cytoskeleton including microtubules, microfilaments, and intermediate filaments. Chapter eight examines the energy conversion capabilities of mitochondria and chloroplasts. It also discusses the role of peroxisomes as oxidative organelles.

004SBLGS3 Clinical Biochemistry 3 Cr.

This course builds upon studies in structural and metabolic biochemistry. It aims to equip students to 1) Evaluate pathophysiological biochemical parameters, homeostasis, and regulatory mechanisms related to carbohydrate, lipid, protein metabolism, hepatic and renal functions, electrolyte and phosphocalcic balances, and blood gases. 2) Recognize biochemical parameters in healthy individuals and understand physiological variations

in the aforementioned functions, along with biochemical abnormalities. 3) Select and apply biochemical assay methods, identify interferences, assess markers including tumor and cardiac biomarkers, interpret results, identify associated pathological disorders, and provide clinical-biological advice to enhance diagnostic and preventive care. 4) Master major pathologies, including risk factors, and biochemical, biological, and molecular diagnostic methods: pathologies of carbohydrate, lipid, protein metabolism, cancer and cardiac pathologies, liver and kidney diseases, electrolyte and phosphocalcic disorders, uric acid, and blood gases.

041CUGEL1 Communication and Human Relations 2 Cr.

This course focuses on mastering communication and understanding human relationships.

041INFOL1 Computer Science 2 Cr.

This course helps students acquire the knowledge and skills to effectively communicate using computer language.

016GRCOL2 Conflict Management and Resolution 3 Cr.

This course enables students to understand the different stages of conflict management, considering conflicts as opportunities for personal and professional growth. Through equipping them with effective techniques, this approach promotes the development of non-violent communication skills and positive attitudes.

004EVENI2 Creativity in Sustainable Development 2 Cr.

This course aims to optimize the equilibrium between the environmental impact of an event and its effectiveness.

041SCBIL4 Cytogenetics and Molecular Biology Internship 1 Cr.

This internship helps students acquire the knowledge, technical skills, and attitudes necessary to effectively perform tasks related to the microscopic analysis of chromosomal preparations.

041MMFEL6 End of Study Thesis 5 Cr.

This course aims to help students develop skills in documenting, writing, and presenting topics in biomedical sciences to a jury.

041ENDOL5 Endocrinology 2 Cr.

This course aims to enhance students' understanding of endocrinology to effectively conduct analyses in medical biology.

041ANGLL3 English 4 Cr.

This course aims to enhance proficiency in written and spoken English.

004SECOS3 First Aid 2 Cr.

This course explores the history and organization of the Red Cross, focusing on the study of emergency care and protocols for managing various medical cases.

018ETHFL1 Fundamental Ethics 3 Cr.

This course delves into fundamental questions within a world of diverse perspectives and values. It examines how norms can vary and converge based on personal beliefs. Key topics include: What actions truly enhance human experience for oneself and others? How can individuals lead fulfilling and responsible lives?

041PHARL6 Fundamentals of Pharmacology 2 Cr.

This course covers the fundamental pharmacological concepts relevant and applicable in both hospital and private laboratories.

004BIOGL1 General Biology 2 Cr.

This course covers comparative anatomy among vertebrates, reproduction, fertilization, embryology, and general concepts of the living world.

004CHGEL1 General Chemistry + Practical Work 3 Cr.

This course enables students to acquire fundamental concepts of general chemistry necessary for future studies, fostering critical and scientific thinking.

041TPCGL1 General Chemistry Practical Work 1 Cr.

These practical works introduce the fundamentals of general chemistry.

004GENEI1 Genetics 3 Cr.

This course provides a comprehensive overview of clinical genetics, aiming to familiarize students with the fundamental principles of human genetics and its crucial implications in medical practice. The first part of this course introduces the molecular basis of genetics, defining key scientific terms commonly used in the field. It covers essential concepts such as the transfer of genetic information from DNA to protein and the consequences of nucleotide variations on human diseases. Subsequent sections delve into different types of genetic disorders, focusing on chromosomal diseases and monogenic pathologies. A significant part of the course involves studying pedigrees of families affected by genetic diseases, exploring the modes of transmission of Mendelian disorders including autosomal dominant inheritance, autosomal recessive inheritance, and X-linked inheritance. The course examines genetic diseases from both molecular and clinical perspectives. Additionally, this course addresses various aspects of genetic transmission, including penetrance, expressivity, de novo mutations, mosaicism, consanguinity, and others. Another part covers cancer genetics and population genetics.

004SOLOI2 Health Sociology 2 Cr.

This course covers the social and cultural dimensions of health and introduces the sociological perspectives on various aspects of health and illness. It aims to develop the necessary skills for "collaborating with healthcare professionals in any care setting" and "approaching all tasks with scientific rigor".

041HEMAL3 Hematology 3 Cr.

This course focuses on understanding blood components and applying theoretical knowledge in hematology within a medical biology laboratory.

041SHEML2 Hematology Internship I 2 Cr.

This internship helps students acquire the knowledge and skills to conduct sampling techniques and manual hematological techniques while adhering to safety, hygiene, and quality rules.

041STHEL3 Hematology Internship II 2 Cr.

This internship helps students acquire the knowledge and skills to conduct blood sampling and apply dosage techniques while adhering to safety, hygiene, and quality rules.

041SHIHL5 Hematology Internship III 2 Cr.

This internship helps students acquire the knowledge and skills to conduct hematology analyses and apply serology techniques while adhering to safety, hygiene, and quality rules.

041HISTL2 Histology 2 Cr.

This course equips students with the knowledge and skills necessary to perform technical tasks in anatomical pathology and cytology, under the supervision of a pathologist.

041STHIL2 Histology Internship 1 Cr.

This internship helps students acquire the knowledge and skills necessary for specimen handling and diagnosis in anatomical pathology laboratories, following relevant guidelines.

041SHORL6 Hormonology Internship 2 Cr.

This internship helps students acquire the knowledge and skills to perform laboratory analyses in hormonology following standardized practices.

004ANPHL2 Human Anatomy and Physiology I 4 Cr.

This course enables students to acquire knowledge about one of the most fascinating topics: their own body. The study of anatomy and physiology equips future healthcare professionals with the foundational knowledge crucial for their clinical training. It focuses on the relationship between structure and function:

- Anatomy explores the form or structure of body parts and their interrelationships.
- Physiology explores the functioning of body parts, specifically their mechanisms and role in sustaining life.

Clinical cases are introduced when relevant, aiming to highlight normal body functioning, always with the purpose of enhancing understanding, rather than as standalone exercises.
By the end of this course, students will be able to:

- Describe the different systems and master a basic three-dimensional model of the human body's structure.
- Define homeostasis as the body's continuous pursuit and maintenance of internal equilibrium.
- Asses the temporary or permanent repercussions on the body when homeostasis is disrupted.
- Understand new diagnostic and treatment methods for diseases.
- Appreciate scientific discoveries in healthcare.
- Apply acquired knowledge to maintain good health.
- Explain fundamental biological concepts to accurately use anatomical and physiological terminology.
- Identify patient health needs.

004ANAPL3 Human Anatomy and Physiology II 4 Cr.

This course enables students to acquire knowledge about one of the most fascinating subjects: their own body. The study of anatomy and physiology equips future healthcare professionals with the foundational knowledge crucial for their clinical training. It focuses on the relationship between structure and function:

- Anatomy explores the form or structure of body parts and their interrelationships.
- Physiology explores the functioning of body parts, specifically their mechanisms and role in sustaining life.

Clinical cases are introduced when relevant, aiming to highlight normal body functioning, always with the purpose of enhancing understanding rather than as standalone exercises.
General Objective:
This course aims to understand the human body as a dynamic system of interdependent parts rather than isolated structural units.

004SANEI2 Hygiene 2 Cr.

This course focuses on principles, practices, and hygiene protocols essential for maintaining and improving health. It covers hygiene protocols in premises, equipment, personal care, and food handling. These protocols aim to prevent transmissible diseases and address contamination sources within communities.

004HYDOS2 Hydrology 1 Cr.

This course aims to expand student's understanding of public health issues concerning water, focusing on diseases transmissible to humans and the preventive measures required at both individual and community levels.

004IPEAS2 Immunology + Pathology + Practical Work 4 Cr.

This course covers the physiological and pathological aspects of humoral and cellular immunity, along with diagnosis methods.

041STIML4 Immunology Internship I 2 Cr.

This internship helps students acquire the knowledge and skills in applying serology techniques following safety, hygiene, and quality rules.

041SIMML5 Immunology Internship II 2 Cr.

This internship helps students acquire the knowledge and skills to perform laboratory analyses in immunology following standardized practices.

004CHIOL1 Inorganic Chemistry 1 Cr.

This course introduces organometallic chemistry of transition metals. It focuses on theories of chemical bonding in inorganic compounds, as well as fundamental concepts of coordination chemistry, including structure, physicochemical properties, and reactivity. By the end of this course, students should be able to:

- Identify and analyze the mechanisms of action of inorganic complexes and chelating agents pivotal in pharmacology.
- Recognize essential properties in the descriptive chemistry of elements.
- Analyze current topics in environmental chemistry, catalysis, bioinorganic chemistry, and therapeutic chemistry.

041VST3L6 Internship Validation III 1 Cr.

This validation aims to confirm that the student has acquired competencies in problem-solving and decision-making necessary for their professional practice.

041SEALL6 Introduction to Food Safety 2 Cr.

This course covers the surveillance and prevention of food poisoning through the application of hygiene regulations adhering to international standards.

496IESPM1 Introduction to Public Health 2 Cr.

This course provides an overview of public health and global health concepts, covering their basic definitions, key terms, history, governance, mandates, functions, and services. It addresses health determinants examining their social, economic, or political influences. This course also distinguishes between clinical health sciences (medicine, dentistry, nursing, etc.), and explores the definition and implementation of the Sustainable Development Goals.

041SQLTL6 Laboratory Quality Assurance 1 Cr.

This course aims to establish a laboratory quality team led by a quality biologist, supported by quality technician specialists acting as "quality coordinators", to ensure the continuous implementation of the quality management system.

041LWRNL6 Leadership and Work Ready Now 2 Cr.

This course helps students build their self-confidence, broaden their perspective, and adapt to change. Students will build a comprehensive career portfolio (CV, cover letter, etc.) throughout the course, serving as a valuable tool in their transition from student to employee.

041TDSIL5 Learning Through Clinical Cases 2 Cr.

This course enables future healthcare professionals to synthesize the knowledge acquired throughout the program and integrate it into the core of medical laboratory analysis.

004MATTL1 Mathematics 2 Cr.

This course explains the mathematical formulations encountered during university studies and subsequent research. This approach involves delving into mathematical functions used in medical sciences.

004BITHS1 Medical Biotechnology 2 Cr.

This course explores advanced concepts in genetic engineering, biotechnology and its pharmaceutical applications, and therapeutic innovations. It encompasses gene therapy, recombinant proteins, molecular cloning, drug synthesis processes through genetic engineering, biosimilars and regulatory frameworks, gene-drug interactions, and new therapeutic strategies using innovative pharmaceutical biotechnologies.

041SITLL1 Medical Laboratory Internship I 1 Cr.

This internship helps students acquire the knowledge in medical laboratory practice and enhance their autonomy in learning.

041SALML5 Medical Laboratory Internship II 4 Cr.

This internship helps students acquire the knowledge and skills to conduct analyses in hematology, immunology, bacteriology, and biochemistry laboratories following standardized practices.

041GRCML6 Medical Waste Management 1 Cr.

This course aims to familiarize students with approaches and procedures essential for effectively managing chemical and microbiological risks in laboratory settings.

004BIOMS2 Metabolic Biochemistry 4 Cr.

This course builds upon studies in structural biochemistry and prepares for clinical biochemistry. It includes an initial part on enzymology to analyze enzyme mechanisms in biology, identify suitable kinetic models, inhibitions and activations, and their applications in pharmacy and metabolic biochemistry.
The second part of this course develops catabolic and anabolic reactions of major metabolic pathways (carbohydrates, lipids, amino acids, nucleic acids). It studies the energetic balance of different vital metabolic pathways for humans, regulatory mechanisms, homeostasis, and their pathophysiological implications. It allows recognition of major inherited metabolic diseases and primary metabolic diseases and their causes.

004LEMII3 Microbial World 3 Cr.

This course introduces students to the microbial world, aiming to develop the following skills:
- Recognizing different mechanisms of bacterial, viral, parasitic, or fungal infections.
- Identifying cross-infections relevant to pharmacists, as well as those most prevalent worldwide.
- Acquiring the necessary knowledge and prerequisites for advanced microbiology courses.

004MOLBI3 Molecular Biology + Practical Work 4 Cr.

This course introduces the fundamentals of molecular biology, encompassing the transmission of genetic information, DNA, replication, transcription, and translation, as well as variations and mutational mechanisms and their implications in pathologies. It also explores the tools used for gene exploration and the diverse methodologies employed in studying genetic variations and making diagnoses, ranging from traditional approaches to advanced next-generation sequencing techniques.

041CORGL2 Organic Chemistry 3 Cr.

This course introduces the fundamental principles of organic chemistry.
The first part covers essential aspects of structural organic chemistry, aiming to familiarize students with chemical terminology, major functional groups in organic chemistry, and the three-dimensional structure of organic molecules.
Fundamentals of reactivity are also addressed to familiarize students with concepts such as electronic effects, reaction mechanisms, and reactivity of functional groups relevant to modern chemical industries and biological systems.
This course frequently includes examples related to other scientific disciplines, especially in biochemistry.

By the end of this course, students should be able to:
- Identify and name functional groups within a molecule.
- Understand stereochemical rules and various representations and projections.
- Understand different mechanisms and parameters for modifying carbon skeletons or complex chemical functions, and analyze the resulting products.
- Develop an analytical approach to create new molecules.

004PAMYS1 Parasitology - Mycology + Practical Work 4 Cr.

This course offers in-depth exploration of diagnostic approaches in parasitology, mycology, and medical entomology.

041STPML3 Parasitology Internship 2 Cr.

This internship helps students acquire the knowledge and skills necessary in the laboratory diagnosis of mycoses and parasitic diseases while adhering to safety, hygiene, and quality rules.

041SAPHL6 Pathology Anatomy Internship 2 Cr.

This internship helps students acquire the knowledge and skills to apply cytological and histological techniques in anatomical pathology laboratories following standardized practices as requested by the anatomical pathologist.

041PHYSL1 Physics 2 Cr.

This course equips students with essential skills in operating microscopes and utilizing physicochemical analysis techniques crucial for medical laboratory practice.

17CPOSI1 Positive Communication 2 Cr.

Our interaction and communication with others are pivotal in either exacerbating conflicts or fostering communication and defuse tensions. This course invites students to reevaluate their approach to expression and listening, emphasizing four essential elements: observation or description, emotions and feelings, identifying and expressing needs, and formulating requests in a clear and attainable manner.

041SIP1L2 Professional Integration Internship I + Validation I 3 Cr.

This internship helps students acquire the skills necessary to demonstrate increasing autonomy in their practice, while adhering to the scope of their knowledge, skills, and professional responsibilities.

041SIP2L4 Professional Integration Internship II + Validation II 5 Cr.

This internship helps students develop the mindset needed to build their professional identity, assume responsibilities, and deepen their acquired knowledge throughout the year.

041CPAML5 Research Methodology 2 Cr.

This course aims to help students develop their critical thinking skills, especially in analyzing scientific articles to prepare them for presenting their end of study project.

041EXCOL1 Speaking/Writing for Communication 2 Cr.

This course aims to improve student's French language skills, both oral and written, enabling them to efficiently receive, analyze, and communicate information clearly and accurately in various situations.

041MISPL4 Special Microbiology 3 Cr.

This course aims to help students acquire the knowledge and skills to conduct effective laboratory bacterial sampling.

004BIOMI2 Structural Biochemistry 3 Cr.

This course provides a comprehensive exploration of organic constituents, covering anabolism, catabolism, and transformation reactions, including pathological scenarios.
It comprises an introductory part followed by five chapters. The introduction covers carbohydrates, lipids, proteins, and nucleic acids. Chapter one introduces biochemistry and its relevance to physiology, pathology, and medicine. It reviews certain concepts of chemical elements, reactions, and bonds, emphasizing the importance of chemical groups in the functioning of biological molecules. Chapter two focuses on carbohydrates, detailing their structural representations, isomerism, derived molecules, and biological functions. Chapter three delves into lipids, examining fatty acids, triglycerides, phospholipids, glycosphingolipids, steroids, and vitamins. This chapter also provides an overview of active lipids, their derivatives, and their importance as pharmaceutical targets. Chapter four covers proteins beginning with the structure of the twenty amino acids constituting proteins, followed by peptides and their structures, and finally detailing the primary, secondary, tertiary, and quaternary structures of proteins. It also explores derived molecules from amino acids and their importance as pharmaceutical targets. Chapter five addresses the structure of nucleic acids (DNA and RNA), their biological role, and their properties.

041STATL1 Statistics 2 Cr.

This course covers the main statistical methods for analyzing clinical data, interpreting published clinical studies, and preparing the required end of study thesis.

041DITHL3 Therapeutic Dietetics 2 Cr.

This course aims to enhance students' understanding of basic concepts of dietary components on the body and their beneficial effects. It focuses on the management of specific diets throughout different life stages and in the context of various diseases.

064VALEL1 USJ Values in Daily Life 2 Cr.

This course aims to raise students' awareness of the fundamental values of the Saint Joseph University of Beirut.

004VIROS4 Virology 2 Cr.

This course introduces infectious diseases caused by viral agents in humans, including strictly human and zoonotic origins. It aims to develop the following competencies:

- Identifying different pathogenic viruses in humans and understanding the clinical signs of resulting infections
- Introduction to the diagnosing viral infections
- Recognizing different antiviral treatments appropriate for each infection
- Developing fundamental knowledge for distinguishing viral infections from bacterial ones in differential diagnosis.

015ABC2L3 Volunteer and Civic Engagement 2 Cr.

This course is part of the USJ General Education Program. It aims to raise students' awareness of the significance of civic engagement by providing opportunities to participate in various volunteer activities.
It includes theoretical instruction and supervised practical training.