



**LEBANESE UNIVERSITY
FACULTY OF SCIENCES
DEAN OFFICE**

**Master 2 Programs
Description & Curriculum
Major: Biochemistry & Biology**



Master Programs

Please do not exceed one page for all the information

Master Program	Immunology
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>Short description here It focuses on the study of the immune system, including its components, functions, and disorders. The program usually spans one year and combines coursework with research.</p> <p>Core Courses:</p> <ul style="list-style-type: none"> - Molecular and cellular immunology - Tumor immunology - Immunotherapy - Vaccine development - Clinical Immunology - Research Methodology and Writing - Molecular and cellular Pharmacology - Genetic engineering <p>Electives</p> <ul style="list-style-type: none"> - Bioinformatics and Biostatistics - Viral immunology <p>Research projects in faculty labs Interdisciplinary projects with other biomedical fields Internships or collaborations with research institutes and industry</p>
Program Learning Outcomes	Graduates will be equipped with a deep understanding of immunological principles, practical laboratory skills, and the ability to conduct independent research. They will be prepared for further study in PhD programs.
Fields of Work	<p>Careers in:</p> <ul style="list-style-type: none"> - Academic research - Biotechnology - Pharmaceuticals
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major:</p> <p><input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input checked="" type="checkbox"/> Please add other accepted majors if applicable (Medical and Biomedical Sciences)</p>
Coordinator of Master Program	<p>Pr. Haidar Akl Contact information: UL Email address: haidar.akl@ul.edu.lb Alternative email: Haidar.akl@hotmail.com</p>

**Research Master - M2
Immunology
2024-2025**

	Course				
	Code	Title	Credits	Hours	
Semester 3	Common Part				
	RMSE 500	Research Methodology and Scientific English	2	24	
	BioS 501	Cellular and Molecular Pharmacology	3	21	
	BioS 502	Cell and Gene Therapy	3	21	
	M2R Immunology				
	IMNO 507	Immunotherapy I	3	21	
	IMNO 508	Cellular and Molecular Immunology	3	21	
	IMNO 509	Cancer Immunology	5	35	
	IMNO 510	New concept in vaccin and immunotherapy	3	21	
	IMNO 514	Clinical Immunology	5	35	
	IMNO XXX	Elective Course	3	21	
	Total			30	220

The student should take one out of the following courses

IMNO 512: Viral immunology (3 Credits, 21 H)

IMNO 513 : Computational Biology (3 Credits, 21 H)

	Course			
	Code	Title	Credits	Hours
Semester 4	IMNO 580	Master thesis	30	
	Total			30



Master Programs

Master Program	Molecular Immunology and Cancer Biology
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>This program consists of 18 months study including course work and preparation of Master Thesis.</p> <p>The objective of this program is to offer high-quality education in Molecular Immunology, Immunotherapy, Cancer Biology, and Cell Signaling at both theoretical and practical levels. This program is designed for students majoring in biology, biochemistry, pharmacy, public health, and medicine who seek to gain in-depth knowledge with a significant impact in the fields of Molecular Immunology and Cancer Biology.</p> <p>The program draws upon the complementary expertise of faculty members and researchers at the Lebanese University (UL) and is supported by well-equipped laboratories and advanced scientific equipment. Collaborators from private or foreign universities will contribute to the curriculum, with varying degrees of involvement depending on the specialty. Partner laboratories will also play a role in supervising students during their internships.</p>
Program Learning Outcomes	<p>Students who complete the program will acquire the following general skills:</p> <ul style="list-style-type: none">• Scientific and technical proficiency in immunology, Cancer Biology, and cellular biology• Ability to analyze scientific articles.• Capacity to independently develop and write projects.• Initiative-taking aptitude• Teamwork skills
Fields of Work	Upon completion of the master's program, graduates can pursue a PhD program (Preparation for a PhD in Lebanon or abroad).
Admission Requirements	Applicants should hold : M1 Biology or M1 Biochemistry (GPA \geq 75/100 over the 4 years (BS+M1)) Or pharmacy diploma (GPA \geq 75/100 over the 5 years) Or enrolled in Medical Sciences (completed 5 years with GPA \geq 75/100).
Coordinator of Master Program	Pr. Bassam Badran <i>Contact information:</i> UL Email address: bassam.badran@ul.edu.lb
Program Curriculum	Attached below

**Master 2 Research
Molecular Immunology and Cancer Biology
2024-2025**

Semester 3	Course			
	Code	Title	Credits	Hours
	MICB 501	Gene therapy	4	24
	MICB 502	Molecular immunology	4	24
	MICB 503	Seminar in molecular immunology and cancer biology	8	56
	MICB 504	Cancer biology	4	24
	MICB 505	Advanced techniques in molecular biology	4	24
	MICB 506	Applied biostatistics	4	24
	RMSE 500	Research methodology	2	24
	Total		30	200

Semester 4	Course			
	Code	Title	Credits	Hours
	MICB 580	Master thesis	30	
	Total		30	240



Master Programs

Master Program	Genomics and Health/ Génomique et Santé/ GNSA
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	The Genomics and Health Master's program is a dynamic, interdisciplinary academic and research program that explores the relationship between genomics and human health. This program provides a solid understanding of genomics, a rapidly evolving field, and knowledge of its sophisticated technologies, bioinformatics, and applications across various domains. The curriculum encompasses fundamental and functional genomics, gene editing, polymorphisms, transcriptomics, proteomics, developmental biology, genomics instability, DNA damage, genetics, epigenetics, and therapeutic strategies, alongside concepts and practices of molecular bioengineering. Moreover, students go into forensic concepts, personalized medicine, bioethics principles, and the implications of genomic information and technology on healthcare outcomes. Enriching the educational experience, guest researchers, external seminars, and internships augment the skills and qualifications of enrolled students. Completion of the master's program equips students for entry into doctoral programs and paves the way for a research-oriented career path.
Program Learning Outcomes	<ul style="list-style-type: none"> • Analytical and critical skills • Introduction to research: ethical and responsible conduct • Effective oral communication • Design of an experimental strategy / writing of a report / analysis of an article • Teamwork: managing and collaborating
Fields of Work	The field of Genomics and Health opens up a wide range of career opportunities across various sectors as: <ul style="list-style-type: none"> • Research: health, agriculture, evolutionary, microbial, genetics, forensic and medicine genomics • Academia and pedagogy • Biotechnologies/drug discoveries and pharmaceutical companies • Genomic counseling/ diagnosis sector • Personalized medicine startups • Bioinformatics and data science
Admission Requirements	<p>GPA: Minimum GPA of 68/100 for students from LU (French and English) Minimum GPA of 3 for students from outside LU</p> <p>Major:</p> <p><input checked="" type="checkbox"/> Biochemistry/Biochimie <input checked="" type="checkbox"/> Animal Biology/ Biologie animale <input type="checkbox"/> Plant Biology <input type="checkbox"/> Chemistry</p> <p><input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics</p> <p><input checked="" type="checkbox"/> Public health/Medicine</p>
Coordinator of Master Program	<p>Mme Raghida Abou Merhi</p> <p>Contact information: UL Email address: raboumerhi@ul.edu.lb Alternative email: raghidaam@yahoo.com Phone number (optional): +961- 03 430515</p>

**Research Master - M2
Genomics and Health
2024-2025**

	Course				
	Code	Title	Credits	Hours	
Semester 3	Common Part				
	RMSE 500	Research Methodology and Scientific English	2	24	
	BioS 501	Cellular and Molecular Pharmacology	3	21	
	BioS 502	Cell and Gene Therapy	3	21	
	M2R Genomics and Health				
	GNSA 502	Developmental Biology: Molecular and Cellular Aspects	3	21	
	GNSA 503	Applied Genetics and Epigenetics	5	35	
	GNSA 508	Genomics, transcriptomics and proteomics	5	35	
	GNSA 509	Biotechnology and Bio-engineering	4	28	
	GNSA 510	Molecular Polymorphisms : Pharmacotoxicogenomic	5	35	
	Total			30	220

	Course			
	Code	Title	Credits	Hours
Semester 4	GNSA 580	Master Thesis	30	
	Total			30



Master Programs

Master Program	Géosciences de l'environnement
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>Les géosciences de l'environnement impliquent la compréhension de la circulation des fluides, des solutés et de la chaleur dans les milieux géologiques à l'échelle de millénaires. Elles comprennent aussi la compréhension des processus géologiques actuels et leurs impacts sur l'environnement et sur les risques naturels (érosion des berges, sismicité, volcanisme, etc.). Cette thématique de recherche multidisciplinaire englobe ainsi divers aspects des systèmes géologiques superficiels: géomorphologie, sédimentologie, géophysique, géochimie, microbiologie et écologie.</p> <p>Ce master appliqué et fondamentale s'appuiera sur les compétences de collègues enseignants chercheurs mais également de nombreux intervenants extérieurs impliqués dans ces problématiques à travers d'exemples géologiques concrets (en laboratoire et sur le terrain) traitant des enjeux sociétaux.</p>
Program Learning Outcomes	<ul style="list-style-type: none"> • Maîtriser et mobiliser les concepts fondamentaux en géosciences de l'environnement. • Analyser et interpréter des données scientifiques environnementales en français et en anglaise. • Appliquer les concepts sur le traitement et la conservation des ressources environnementales (aquatique, terrestre et atmosphérique).
Fields of Work	<p>Le Master de Géosciences est une formation complémentaire est fournie en termes des matières premières, minérales et énergétiques afin d'élargir l'éventail des chances de l'embauche des jeunes diplômés. Ce Master, quoique spécialisé, n'oublie pas d'inculquer aux étudiants l'esprit d'innovation et de recherche, dans la mesure où une bonne part d'entre eux passera comme admissible pour la préparation d'un Doctorat National.</p> <p>Le stage de fin d'étude est un travail mené par l'étudiant dans un organisme privé semipublic ou public dont l'activité : i) répercute des conséquences sur l'Environnement physique, humain ou naturel, ii) consiste à puiser des ressources naturelles sur l'Environnement, telles les ressources hydriques, les matériaux de construction, iii) nécessite des études techniques spéciales, ou consiste à rechercher des méthodes alternatives ayant des retombées économiques positives. Dans ce contexte, l'étudiant est appelé à sortir de son cadre académique pour découvrir le milieu professionnel, et valoriser l'outil des géosciences dans le domaine socio-économique.</p>
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input type="checkbox"/> Biochemistry <input type="checkbox"/> Animal Biology <input checked="" type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input checked="" type="checkbox"/> Géosciences - Biodiversity</p>
Coordinator of Master Program	<p>Pr. Zeinab Matar Contact information: UL Email address: z.matar@ul.edu.lb Alternative email: kveronique@ul.edu.lb Phone number (<i>optional</i>): +961- 76 - 971133</p>

**Master Recherche - M2
Géosciences
2024-2025**

	Cours				
	Code	Titre	Crédits	Nb. d'heures	
Semestre 3	Tronc Commun				
	GEOL 501	Traitement de signal : études de cas (Chypre)	6	42	
	GEOL 502	Ingénierie, modélisation et caractérisation des réservoirs (Chypre)	6	42	
	GEOL 520	Traçages géochimiques et isotopiques	3	21	
	GEOL 523	Gestion et stockage géologique des déchets	3	21	
	RMSE 500	Méthodologie de la recherche et Anglais scientifique	2	24	
	Total			36	262
	Option : Géosciences de l'Environnement				
	GEOL 521	Modélisation des transferts (sol/air/eau)	3	21	
	GEOL 522	Technologies des traitements des effluents gazeux et liquides	4	28	
	GEOL 524	Analyse spatiale de ruissellement et d'érosion	3	21	
	Total			30	220

	Cours				
	Code	Titre	Crédits	Nb. d'heures	
Semestre 4	GEOE 580	Mémoire	30		
	Total			30	



Master Programs

Master Program	Applied Plant Biology and Environment - APBE
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>Applied Plant Biology and Environment is a master's program that focuses on using living organisms, particularly plants, to address environmental challenges and enhance food security. The program equips students with interdisciplinary skills (know-how) to address environmental challenges and conservation, improve crop productivity and security, and contribute to sustainable agriculture through plant biotechnology.</p> <p>The master includes 2 options: Applied Plant Biotechnology (APLB) and Phyto-Ecology: Resources, Security and Application (PHTE).</p>
Program Learning Outcomes	<ul style="list-style-type: none"> • This program offers students the opportunity to develop their studies uniquely tailored to their professional goals and research interests. • Key aspects and knowledge in the field of Genetic Engineering to withstand stress and enhancing agricultural productivity for climate adaptation, climate change adaptation, applied plant biotechnology including agriculture, phytoremediation, and biomaterials.
Fields of Work	<ul style="list-style-type: none"> • Research: PhD program • Research team in governmental institute and centers (Ministry of agriculture and environment)), Lebanese agricultural research institute (LARI), natural reserve ... • Environmental NGOs • Private agricultural companies • Education field
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input type="checkbox"/> Biochemistry <input type="checkbox"/> Animal Biology <input checked="" type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics</p>
Coordinator of Master Program	<p>Pr. Ahmad Kobeissi Contact information: UL Email address: ahmad.kobeissi@ul.edu.lb Alternative email: apbe.m2@gmail.com Phone number (<i>optional</i>): +961- 3 – 612 566</p>

Research Master - M2
Applied Plant Biology and Environment
2024-2025

		Course				
Code	Title	Credits	C	TS	Hours	
Common Courses						
APBE 500	Plant Stress Resistance	4	28		28	
APBE 501	Biostatistics	3	21		21	
APBE 502	Environmental Biology	3	21		21	
RMSE 500	Research Methodology and Scientific English	2		24	24	
Option : Phyto-ecology : Resources, Security and Applications						
PHTE 500	Phyto-ecology: succession and restoration	3	21		21	
PHTE 510	Cultural practices in plants	3	21		21	
PHTE 512	Environmental Legislation	3	21		21	
PHTE 513	Biological Agriculture	3	21		21	
PHTE 514	Eco-friendly Materials : Approach and Application	3	21		21	
PHTE 515	Phyto-Technologies	3	21		21	
Total		30	196	24	220	
Option : Applied Plant Biotechnology						
APLB 501	Plant metabolic engineering	4	28		28	
APLB 504	Molecular markers and selection	5	35		35	
APLB 508	Advanced plant tissue culture and plant breeding	4	28		28	
APLB 512	Advanced Plant Genomics	2	14		14	
APLB 513	Proteomics and Transcriptomics in Plant Science	3	21		21	
Total		30	196	24	220	

		Course				
Code	Title	Credits	C	TS	Hours	
PHTE 580 APLB 580	Master Thesis	30				
Total		30				



Master Programs

Master Program	Marine Biology and Ecology (BEMA)
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>This master's degree covers marine biology (Science of marine organisms) and marine ecology. It focuses on the ecosystem approach to marine resources and aims to train future scientists who understand the functioning and management of marine ecosystems using analysis, observation tools, modern technologies, and mathematical modeling.</p> <p>Holders of this diploma will be able to develop research or development activities that require an understanding of the mechanisms governing the functioning of marine systems subjected to natural and anthropogenic disturbances. In addition to their research abilities, graduates will be able to apply their knowledge in consulting and project support situations.</p> <p>The teaching method includes conferences and workshops for analyzing scientific articles. A practical internship of 5 to 6 months, conducted in the second semester, is compulsory. Obtaining the BEMA Master requires passing the internship defenses and all oral and written exams.</p>
Program Learning Outcomes	<ul style="list-style-type: none"> • Understand the biological and ecological processes of marine species • Understand the role of living organisms in the functioning of marine ecosystems • Be able to develop research or development activities • Know the management of marine ecosystems • Provide advisory and support services for projects
Fields of Work	This Master2 Research program is a compulsory gateway for those aiming for a PHD in marine science. In addition, it prepares graduates for careers in public research organizations (such as CNRS), the ministries of the Environment, Agriculture and National Education as well as companies, NGOs and national and international agencies.
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input checked="" type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input checked="" type="checkbox"/> Ecology - Environmental Sciences</p>
Coordinator of Master Program	<p>Pr. ABOU-HAMDAN Hussein</p> <p>Contact information: UL Email address: husseinabouhamdan.1@ul.edu.lb Alternative email: ah.husseini@yahoo.fr Phone number (optional): +961 3 032827</p>

**Research Master - M2
Marine Biology and Ecology
2024-2025**

	Course			
	Code	Title	Credits	Hours
Semester 3	BEMA 502	Protection, restoration and sustainable management of marine environment	3	21
	BEMA 503	Statistics : analysis and data processing	3	21
	BEMA 509	Modeling in marine ecology	3	21
	BEMA 510	Introduced and invasive species in the marine environment	4	28
	BEMA 511	Geomatics	4	28
	BEMA 512	Physical and chemical oceanography	3	21
	BEMA 513	Marine Microbial Ecology	2	16
	BEMA 514	Marine products of biological, chemical and ecological interest	2	16
	BEMA 515	Cetology	2	16
	BEMA 516	Estuarine ecosystems	2	16
	RMSE 500	Research Methodology and Scientific English	2	24
	Total		30	228

	Course			
	Code	Title	Credits	Hours
Semester 4	BEMA 580	Research Internship	30	
	Total		30	



Master Programs

Master Program	Cancerology
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>This Master is based on areas of excellence in fundamental and molecular cancer research. The learning outcomes are to provide students with very strong skills in the oncology field and to train them in-depth on research skills in molecular pharmacology and biology applied to cancers. The curriculum is based on the learning, understanding and acquisition of:</p> <p>(1) the approach to essential basics of cellular abnormalities and cancer stem cell research (2) the mechanisms involved in the regulation of mutagenesis, carcinogenesis, intracellular signaling, angiogenesis and metastasis (3) the basic and methodological advances in the study of molecular mechanisms of various bioactive molecules and their potential anti-cancer and therapeutical effects (4) the specific advances used in the characterization of tumor cell transformation (5) the different therapeutic anti-cancer approaches from benchwork to preclinical stages and clinical practice and New Target therapy.</p>
Program Learning Outcomes	<p>This master program learning outcomes</p> <p>Outcome 1-Students will be informed about cancer research by illustrating the various approaches mastered by the different teams involved in the trainings including working on gene regulation during the pathology and treatment of cancers.</p> <p>Outcome 2-Students will acquire the essential elements needed for an understanding of the mechanisms regulating genes expression and signaling pathways involved in malignant transformation for basic and applied research.</p> <p>Outcome 3-Students will be given outlines of research directed towards the discovery and development of novel therapeutics.</p> <p>Outcome 4-Students will be prepared to join a PhD program in the field of Oncology and pharmacological research.</p> <p>Outcome 5 -Students will acquire the needed research skills and necessary knowledge to perform their investigations in molecular oncology and cellular pharmacology laboratories</p>
Fields of Work	At the end of the Master 2 Research in Oncology, graduates will be able to either join a PhD program to prepare of a doctoral thesis in Lebanon or abroad, or enter a professional activity in the pharmaceutical or hospital sectors, or practice teaching and/or research (research assistant, etc.). This Master's degree has the particularity of combining both "research" orientation and professional objectives.
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major:</p> <p><input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input checked="" type="checkbox"/> Pharmacy and Medicine</p>
Coordinator of Master Program	<p>Pr. Mona Diab Assaf</p> <p>Contact information: UL Email address: mdiabassaf@ul.edu.lb Alternative email: monadiabassaf@hotmail.com , Phone number): +961- 03 501928</p>

**Research Master - M2
Cancerology
2024-2025**

	Course			
	Code	Title	Credits	Hours
Semester 3	Common Part			
	RMSE 500	Research Methodology and Scientific English	2	24
	BioS 501	Cellular and Molecular Pharmacology	3	21
	BioS 502	Cell and Gene Therapy	3	21
	M2R Oncology			
	CNCR 505	Cancers physiopathologies and oncogenesis	5	35
	CNCR 506	Methods for the Study of cytotoxicity and advances in the detection and characterization of cancer	3	21
	CNCR 508	The cell and its anomalies in cancer	5	35
	CNCR 509	Mutagenesis, carcinogenesis and angiogenesis, metastasis	5	35
	CNCR 510	Pharmacology of anti-tumor drugs	4	28
	Total			30

	Course			
	Code	Title	Credits	Hours
Semester 4	CNCR 580	Master Thesis	30	
	Total			30



Master Programs

Master Program	Stem Cells, Organogenesis and Regenerative Medicine (SCRM)
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<ul style="list-style-type: none"> - 1-year master's degree program aims to provide a high level of scientific knowledge and understanding of stem cell biology and regenerative medicine. - Designed to provide advanced education and hands-on research experience - Dedicated to applicant with a scientific or medical background interested in pursuing a professional or research career in the stem cells and Regenerative Medicine field of stem cells therapies or academia
Program Learning Outcomes	<ul style="list-style-type: none"> - Demonstrate advanced knowledge and understanding of the fundamental principles, concepts, and current research in stem cell biology, including embryonic, adult, and induced pluripotent stem cells. - Critically analyze the properties, potential, and limitations of different stem cell types and their applications in regenerative medicine. - Evaluate the regulatory, ethical, and social considerations surrounding the use of stem cells in research. - Design and execute independent research projects and clinical protocols related to stem cell technology, using appropriate experimental methods, statistical analysis and data interpretation. - Demonstrate advanced proficiency in various stem cell culture techniques, including isolation, expansion, characterization, and differentiation of stem cells. - Critically appraise the current state of the art in stem cell-based therapies and regenerative medicine, and identify promising future directions for research and clinical applications.
Fields of Work	<ul style="list-style-type: none"> - Research-focused roles in academia or medical field: <ul style="list-style-type: none"> • Pursue a PhD by applying to and international PhD program • Laboratory research assistant. • Clinical research field - Careers in the growing stem cell therapeutics and industrial field <ul style="list-style-type: none"> • Stem cells banking • Tissue engineering
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major:</p> <p><input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input checked="" type="checkbox"/> Medical Field (MDs, Dentistry, Paramedical ...)</p>
Coordinator of Master Program	<p>Pr. Aline Hamade <i>Contact information:</i> UL Email address: aline.hamade@ul.edu.lb Alternative email: alinehamade@gmail.com Phone number (<i>optional</i>): +961- 03 026533</p>

Professional Master - M2
Stem Cells, Organogenesis and Regenerative Medicine
2024-2025

		Cours				
		Code	Title	Credits	C	TS
Semester 3	Tronc Commun					
	RMSE 500	Research Methodology and Scientific English	2		24	24
	BioS 501	Cellular and Molecular Pharmacology	3	21		21
	BioS 502	Cell and Gene Therapy	3	21		21
	SCRM 501	Advances in developmental biology and stem cells	3	14	15	29
	SCRM 502	Cell and tissue engineering	3	14	15	29
	SCRM 503	Stem Cells regulations and ethical choices	2	14		14
	SCRM 504	Advanced immunology and immunopathology	3	14	15	29
	SCRM 505	Plasticity of cultured stem cells	3	14	15	29
	SCRM 506	Biology of cancer stem cells	3	14	15	29
	SCRM 507	Cell therapy and writing of therapeutics protocols	3	21		21
SCRM 508	Statistical Concepts in biology and health sciences	2	7	15	22	
Total			30	154	114	268

		Cours				
		Code	Title	Credits	C	LS/TS
Semester 4	Course					
	SCRM 580	Master Thesis	30			
	Total			30		



Master Programs

Please do not exceed one page for all the information

Master Program	Structural Biochemistry: Interactions and Communications of Macromolecules								
Master Type	<input type="checkbox"/> M1+ M2 Professional <input type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research								
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French								
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input checked="" type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh								
About the Program	<p>The Master 2 Research: Structural Biochemistry "Interactions and Communications of Macromolecules" offers a multidisciplinary training that targets the study of the molecular aspects of macromolecules.</p> <p>This program provides students with knowledge that allows them to decipher the molecular mechanisms of the functioning of living creatures, and aims to form scientists capable of understanding, both on a theoretical and practical level, the concepts and tools related to recent developments in the fields of biochemistry, molecular biology, proteomics, bioinformatics, biophysics, molecular engineering, drug design, gene therapy and biotechnology.</p>								
Program Learning Outcomes	<ol style="list-style-type: none">1. Know the fundamental concepts of biochemistry at an advanced level, the biophysical approaches for the study of biomolecules and the concepts and techniques of molecular modeling.2. Know how to use the molecular mechanisms linked to define complex biological systems for the design of new bioactive molecules and new therapeutic strategies.3. Ability to collaborate with other scientists, to interpret experimental data, to produce significant original research and to present their work through written, oral, and visual presentations.								
Fields of Work	<ul style="list-style-type: none">• Academic research in several disciplines• Research and development in the food industry, biotechnology, the pharmaceutical industry and environment-related companies• Technical-commercial professions• Continuation of doctoral studies								
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major:</p> <table><tr><td><input type="checkbox"/> Chemistry</td><td><input checked="" type="checkbox"/> Biochemistry</td><td><input checked="" type="checkbox"/> Animal Biology</td><td><input type="checkbox"/> Plant Biology</td></tr><tr><td><input type="checkbox"/> Math</td><td><input type="checkbox"/> Computer Science</td><td><input type="checkbox"/> Electronics</td><td><input type="checkbox"/> Physics</td></tr></table>	<input type="checkbox"/> Chemistry	<input checked="" type="checkbox"/> Biochemistry	<input checked="" type="checkbox"/> Animal Biology	<input type="checkbox"/> Plant Biology	<input type="checkbox"/> Math	<input type="checkbox"/> Computer Science	<input type="checkbox"/> Electronics	<input type="checkbox"/> Physics
<input type="checkbox"/> Chemistry	<input checked="" type="checkbox"/> Biochemistry	<input checked="" type="checkbox"/> Animal Biology	<input type="checkbox"/> Plant Biology						
<input type="checkbox"/> Math	<input type="checkbox"/> Computer Science	<input type="checkbox"/> Electronics	<input type="checkbox"/> Physics						
Coordinator of Master Program	<p>Pr. Achraf KOUZAYHA</p> <p>Contact information: UL Email address: achraf.kouzayha@ul.edu.lb Alternative email: achraf.kouzayha.fs3@gmail.com Phone number (<i>optional</i>): +961- 71 - 904573</p>								

Research Master - M2
Structural Biochemistry: Interactions and communications of macromolecules
2024-2025

Semester 3	Course					
	Code	Title	Credits	C	TS	Hours
	BCIM 500	Structural study of proteins	3	21	-	21
	BCIM 501	Biological and biomimetic membranes	4	21	7	28
	BCIM 502	Gene therapy and recombinant proteins technology	4	21	7	28
	BCIM 503	Protein engineering and drug design applications	4	28	-	28
	BCIM 504	Structural characterization of macromolecular complexes	3	21	-	21
	BCIM 505	Structural bioinformatics II	3	21	-	21
	BCIM 506	Enzymology, folding and engineering	4	21	7	28
	BCIM 507	Lipid signaling	3	21	-	21
RMSE 500	Research Methodology and Scientific English	2		24	24	
Total			30	175	45	220

Semester 4	Course					
	Code	Title	Credits	C	TS	Hours
	BCIM 580	Master Thesis	30			
Total			30			



Master Programs

Please do not exceed one page for all the information

Master Program	Molecular Diagnostics and Forensic Science (MDFS) option: Molecular Diagnostics
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input checked="" type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	<p>It is a multi-disciplinary program that utilizes proteomics, genomics to identify trace proteins called “markers” that are secreted into the blood by tumors, or present in cells or tissues.</p> <p>The Master’s Degree in this program provides professional education and training at the graduate level for laboratory scientists in the area of molecular diagnosis for acquired, inherited, and infectious diseases</p>
Program Learning Outcomes	<ul style="list-style-type: none"> • Apply molecular and genetic theory and principles as they relate to human disease in order to facilitate an appropriate diagnosis and/or prognosis • Interpret molecular diagnostics test results to determine a probable disease mechanism • Design a research project that utilizes diagnostic genetics technology to diagnose disease or improve clinical outcomes • Demonstrate the application of molecular biology in real life • Communicate, both orally and in writing, in an effective and scholarly manner
Fields of Work	Upon completion, graduates will be ready to begin an exciting career in a molecular diagnostics laboratory, research institution, public health laboratory, biotechnology firm, and pharmaceutical company.
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input type="checkbox"/> Please add other accepted majors if applicable</p>
Coordinator of Master Program	<p>Pr. Hussein FAYYAD-KAZAN Pr. Fadi Abdel Sater</p> <p>Contact information: UL Email address: hussien.kazan@ul.edu.lb fabdelsa@ul.edu.lb Alternative email: hfayyadk@gmail.com Phone number (<i>optional</i>): +961- xx - xxxxxx</p>

Professional Master - M2
Molecular Diagnostic and Forensic Sciences - Option : Molecular Diagnostic
2024-2025

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	MDFS 512	Principles of Molecular Diagnostics	4	24		15	39
	MDFS 513	Molecular Diagnostic : Techniques and applications	4	16	12	15	43
	MDFS 515	Design and Analysis of Translational Research in Biomedical Sciences	3	16		15	31
	MDFS 524	Innovative cell and gene therapies	6	48			48
	MDFS 525	Biotechnology medicines: applications and regulations	6	48			48
	MDFS 526	Proteomics	3		12	30	42
	ENGL 591	Scientific English & Communication skills	1		20		20
	MDFS XXX	Elective Course	3	8	12	15	35
	Total		30	160	56	90	306

The student must choose one course from the following courses

MDFS 514 Molecular and Cellular pathology

MDFS 517 Molecular Cytogenetics

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 4	MOLD 580	Master Thesis	30				
	Total		30				



Master Programs

Please do not exceed one page for all the information

Master Program	Molecular Diagnostic and Forensic Sciences - Option : Forensic Sciences
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Hadath <input type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	Provides advanced subjects such as forensic biology, toxicology, trace evidence, crime scene investigation, forensic analysis of DNA, blood distribution and spatter, ethics and criminalistics. Students are able to further pursue individual forensic interests with a research project on a topic or area of interest.
Program Learning Outcomes	Recognize diverse aspects of Forensic science, like crime scene management, questioned document examination, Forensic Chemical, biological & physical sciences evidence collection, preservation and evaluation. Interpret the functioning of the justice system, forensic scientists, techniques involved in collection, preservation and evaluation of evidences; various aspects of the allied sciences that assist in forensic investigation protocols, and the step by step development of the investigative procedures. Appraise the concepts learned in the classroom and make conclusions based on scientific thinking, ability to identify and differentiate between methods/protocols, instrumentation and evaluative procedures required in the investigative process that is required for crime solving and also document the same as per norms.
Fields of Work	Crime laboratories employ scientists in the areas of forensic chemistry (drugs, toxicology, trace evidence, explosives, fires, etc.), forensic biology (mainly DNA and body fluids and tissues), and criminalistics (fingerprints, ...).
Admission Requirements	GPA: Minimum GPA of 65/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics
Coordinator of Master Program	Pr. Eva Hamade Contact information: UL Email address: eva.hamade@ul.edu.lb Phone number (optional): +961- 03 -062719

Professional Master - M2
Molecular Diagnostic and Forensic Sciences - Option : Forensic Sciences
2024-2025

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	MDFS 501	Law in Forensic Science	2	30			30
	MDFS 511	Introduction to Forensic Science	3	16		15	31
	MDFS 516	Forensic Entomology and Microbiology	3	24			24
	MDFS 518	Forensic Toxicology	5	40			40
	MDFS 519	Scene investigation and Trace analysis In Forensic Sciences	5	60			60
	MDFS 520	Introduction to the Law	3	30	15		45
	MDFS 521	Document Analysis & Ballestic Forensic	2			30	30
	MDFS 527	Forensic Chemistry	2		10	15	25
	ENGL 571	Scientific English	2		24		24
	MDFS XXX	Elective Course	3	25	20		45
	Total			30	225	69	60

The student must choose one course from the following courses

MDFS 522 Forensic Information Technology

MDFS 523 القانون اللبناني

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 4	FRSC 580	Master Thesis	30				
	Total			30			



Master Programs

Please do not exceed one page for all the information

Master Program	Biology and Marketing
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	This dual-skills Master's degree offers both scientific subjects (biology, pharmacology, cosmetology, etc.) and commercial subjects (management, commerce, sales techniques, communication, etc.). The Master's training takes place over two semesters of courses and seminars. During the first semester, students are required to submit their CV and cover letter to the human resources departments of many pharmaceutical companies, medical companies and national laboratories before the end of January. This semester begins under a real employment paid status for the student, with only his final dissertation remaining to prepare by the end of September. This report must cover the marketing and sales results of one of the products or equipment on the list provided by the company. From July onwards, students are required to submit their final defense.
Program Learning Outcomes	<ul style="list-style-type: none"> • Bring scientific students to the exercise of marketing and sales to customers of research centers or pharmaceutical companies. • Develop relationships by helping students understand the challenges of communication in a commercial environment.
Fields of Work	The holder of the Master Biology and Marketing will be able to work in pharmaceutical companies, the sale of medicines, medical devices, cosmetology and para-cosmetology and laboratories; and in general in companies in the health sector.
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input type="checkbox"/> Please add other accepted majors if applicable</p>
Coordinator of Master Program	Pr. Majida JALBOUT Contact information: UL Email address: mjalbout@ul.edu.lb Alternative email: majidajalbout@gmail.com Phone number (optional): +961- 03 – 166423

**Professional Master - M2
Biology and Marketing
2024-2025**

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 3	BTCO 511	Analytical approaches applied to the quality control of medicines	2	8	12	20
	BTCO 512	Pharmaceutical processes and forms	2	16		16
	BTCO 514	Pharmacotherapy	2	16		16
	BTCO 515	Sales techniques	3	12	12	24
	BTCO 516	Strategic Management	2	16		16
	BTCO 517	Corporate leadership	2	16		16
	BTCO 518	Sale Communication skills	3	12	12	24
	BTCO 519	Human resource Management	2	16		16
	BTCO 520	Market Study and Client Behavior	2	16		16
	BTCO 522	Body language	2	16		16
	BTCO 523	Business development	2	16		16
	BTCO 524	Negotiation	2	16		16
	BTCO 531	General economics	3	16	12	28
	ENGL 591	Scientific English & Communication skills	1		20	20
	Total			30	192	68

BTCO 570: Seminars (80 hours)

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 4	BTCO 580	Master Thesis	30			4 - 5 Months
	Total			30		



Master Programs

Please do not exceed one page for all the information

Master Program	Management and Conservation of Natural Resources
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	Sustainable Development, Environmental Economy and Feasibility Study, Pollutions and Ecotoxicology, Territory Development and Impact Studies, Wild Life Conservation, Environmental Legislation, Environmental Microbiology, Vertebrates Diversity.
Program Learning Outcomes	Management and Conservation of Natural Resources, Understanding Ecological Principles, Conservation Strategies, Sustainable Management Practices, Critical Thinking and problem solving...
Fields of Work	Ministry of Environment, UN, ONG, Municipalities, Forestry Services, Wildlife services, Private sector...
Admission Requirements	GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input checked="" type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics
Coordinator of Master Program	Pr. Hassane Makhlof Contact information: UL Email address: hassane.makhlof@ul.edu.lb Alternative email: drhassanemakhlof@yahoo.fr Phone number (<i>optional</i>): +961- 03 845279

Professional Master - M2
Biodiversity : Management and Conservation of Natural Resources
2024-2025

	Course			
	Code	Title	Credits	Hours
Semester 3	BDPE 500	Environmental Legislation	3	24
	BDPE 501	Biostatistics	3	24
	BDPE 502	Methodology of research and technics of communication	2	24
	ENGL 591	Scientific English & Communication skills	1	20
	GCRN 500	Sustainable Development and Conservation of the Biodiversity	3	24
	GCRN 501	Environmental Economy and Feasibility Studying	3	24
	GCRN 503	Management of territory: Ecology planning and Impact study	3	24
	GCRN 507	Environmental Microbiology	3	24
	GCRN 508	Vertebrate Diversity	3	24
	GCRN 515	Human Wildlife Conflict	3	24
	GCRN 516	Genetically Modified Organisms: risks on the Biodiversity	3	24
	Total			30

	Course			
	Code	Title	Credits	Hours
Semester 4	GCRN 580	Master Thesis	30	
	Total			30



Master Programs

Master Program	Formulation et Sécurité des aliments
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input checked="" type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	Le Master 2 en Formulation et Sécurité Alimentaire est un programme d'études avancées axé sur la compréhension approfondie des sciences alimentaires, de la sécurité sanitaire alimentaire et de la formulation des aliments. Les cours couvrent des sujets tels que, la technologie alimentaire, la réglementation alimentaire, et la gestion des risques alimentaires. Le programme inclue également des aspects de formulation d'aliments fonctionnels et de développement de produits alimentaires innovants. Des stages en entreprise sont intégrés pour offrir une expérience professionnelle concrète.
Program Learning Outcomes	<ul style="list-style-type: none"> • Maîtrise des principes fondamentaux de la sécurité sanitaire des aliments • Connaissance des réglementations nationales et internationales en matière de sécurité sanitaire des aliments et de formulation des aliments, ainsi que des normes de qualité et des exigences de conformité. • Compréhension approfondie des processus de formulation des aliments
Fields of Work	Responsable qualité alimentaire Consultant en sécurité alimentaire Technologue alimentaire Auditeur en sécurité alimentaire Expert en réglementation alimentaire
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input checked="" type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input type="checkbox"/></p>
Coordinator of Master Program	<p>Dr. Maya Kayouka</p> <p>Contact information: UL Email address: maya.kayouka@ul.edu.lb Alternative email: maya.kayouka@gmail.com</p>

Professional Master - M2
Food: Formulation and Security
2024-2025

UPGRADES

FOSA 500 : Documentary Search (12h)

FOSA 501 :Food Technology (32h)

FOSA 503 : Marketing and consumer behavior (12h)

FOSA 504 : Organization and Management of food industries (12h)

FOSA 505 : Legislative and normative aspects of food industries(12h)

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 3	FOSA 507	Contaminants and allergens Microbiology contaminants (20H) Chemical contaminants and allergens (32H)	6	40	12	52
	FOSA 508	Food control and analysis Food control and frauds (24H) Sensory analysis (24H)	5	24	24	48
	FOSA 518	Quality, risks and crisis Management Good industrial practices (16H) Quality Management (24H) Risk and crises management (44H)	9	48	36	84
	FOSA 519	Quantitative risk assessment: foundations and methodology Epidemiology of Nutrition (10 H) Quantitative risk assessment (18 H)	3	16	12	28
	FOSA 520	Food: Conception and innovation Food Packaging (12H) Physico-chemistry of colloids (18H) Optimization: Mixture plans (24H)	6	36	18	54
	ENGL 591	Scientific English & Communication skills	1		20	20
	Total		30	164	122	286

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 4	FOSA 580	Master Thesis	30			
	Total		30			



Master Programs

Master Program	Behavioral and Cognitive Neurosciences
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input checked="" type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	The aim of this program is to promote training in biology, and provide students with a deeper knowledge in Cognitive and Behavioral Neuroscience, allowing graduates to integrate new working fields, or pursue a doctoral thesis (PhD) in neuroscience. This program offers specialized courses in neuroplasticity, neuro-pharmaco-physiology and the physiopathology of cognitive and behavioral disorders (psychiatric disorders, ASD, addictions...), an introduction to the technologies used for both the diagnosis and the treatment of cognitive and behavioral disorders, as well as to the concepts of ethics and the legislation in regards to these disorders, an introduction to neuropsychology, a training in the methodologies of research and epidemiology and an introduction to Neuroinformatics and Artificial Intelligence.
Program Learning Outcomes	A specialized advanced training in neuroscience for biologists allowing : <ul style="list-style-type: none"> • To pursue post graduate studies in research • To integrate public or private sectors in the fields of Research, Education and Health.
Fields of Work	Graduates will be able to pursue a doctoral thesis (PhD) or to integrate public or private sectors in the fields of Research, Education and Health (University hospital research teams, specialized schools, NGOs, rehabilitation centers and anti-drugs programs etc ...)
Admission Requirements	GPA: 65/100 Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University Major: <input type="checkbox"/> Chemistry <input type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics
Coordinator of Master Program	Pr. Rita Nabout Contact information: UL Email address: ritanabo@ul.edu.lb Alternative email: xxx@xxx.com Phone number (optional): +961- xx - xxxxxx

**Professional Master - M2
Behavioral and Cognitive Neurosciences
2024-2025**

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	NSCC 506	Brain exploration and therapy technics	3	8		32	40
	NSCC 510	Mechanisms of brain plasticity	3	24			24
	NSCC 511	Neuropharmacology and neurophysiology of behavior	4	32		8	40
	NSCC 512	Behavioral physiopathologies : multigenic, metabolic and environmental- Cognitive and behavioral neurotoxicology	5	40			40
	NSCC 513	Behavioral neuropsychology	3	24			24
	NSCC 514	Therapeutic modalities	3	24			24
	NSCC 515	Epidemiology and Clinical Project	4	16	24		40
	NSCC 516	Law, legislation and ethics	2	24			24
	NSCC 517	Statistics	2	8	12		20
	ENGL 591	Scientific English & Communication skills	1		20		20
	Total			30	200	56	40

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 4	NSCC 580	Master Thesis	30				
	Total			30			



Master Programs

Master Program	Applied Microbiology (MICA)
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input checked="" type="checkbox"/> French <input type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input checked="" type="checkbox"/> Fanar <input type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	The Master's program in Applied Microbiology aims to equip students with advanced expertise and practical skills in Microbiology , emphasizing real-world applications across various fields. By integrating theoretical coursework with extensive professional laboratory training, this program prepares graduates for careers in biotechnology, pharmaceuticals, environmental science, and other related fields.
Program Learning Outcomes	<ul style="list-style-type: none"> • Understand the regulatory and quality control requirements in microbiological applications within industries such as pharmaceuticals, food safety, and environmental management, as well as healthcare centers. • Master a wide range of microbiological techniques, including microbial culture, identification and genetic manipulation. • Collaborate effectively within interdisciplinary teams, demonstrating strong communication and leadership skills. • Recognize and address ethical issues in microbiological applications, adhering to professional standards and societal expectations.
Fields of Work	Graduates of the Applied Microbiology Master's program are well-prepared for a variety of career paths, including: Biotechnology and Pharmaceuticals: Roles in R&D (Research and Development) department and quality control, Environmental Science: Positions in environmental monitoring, bioremediation projects, and waste management, Healthcare: Opportunities in clinical laboratories and public health organizations, Food and Beverage Industry: Careers in food safety and quality assurance.
Admission Requirements	<p>GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University</p> <p>Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input checked="" type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input type="checkbox"/> Please add other accepted majors if applicable</p>
Coordinator of Master Program	<p>Dr Claude Daou</p> <p>Contact information: UL Email address: claude.daou@ul.edu.lb Alternative email: claudedaou10@gmail.com Phone number (<i>optional</i>): +961- 03 927666</p>

**Professional Master - M2
Applied Microbiology
2024-2025**

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	MICA 506	Quantitative Risk Assessment	3	24			24
	MICA 515	Biomedical, veterinary, and pharmaceutical microbiology	3	16	12		28
	MICA 517	Microbiological and Food Process engineering	3	8	24		32
	MICA 521	Molecular mechanisms of microbial pathogenicity	3	16	12		28
	MICA 522	Microorganisms and environment, risk management	3	24			24
	MICA 523	Food microbiology and safety	3	16	12		28
	MICA 524	Research strategies and scientific monitoring	3		36		36
	MICA 525	Molecular Virology and its applications	3	24			24
	MICA 503	Antimicrobial agents and resistance	2	12	8		20
	MICA 527	Sociomicrobiology and Metagenomic approaches	3	24			24
	ENGL 591	Scientific English & Communication skills	1		20		20
	Total			30	164	124	

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 4	MICA 580	Master Thesis	30				
	Total			30			



Master Programs

Please do not exceed one page for all the information

Master Program	Human molecular diagnostics
Master Type	<input type="checkbox"/> M1+ M2 Professional <input checked="" type="checkbox"/> M2 Professional <input type="checkbox"/> M2 Research
Teaching Language	<input type="checkbox"/> English <input type="checkbox"/> French <input checked="" type="checkbox"/> Mixed - English & French
Place of Teaching (Campus)	<input type="checkbox"/> Hadat <input type="checkbox"/> Fanar <input checked="" type="checkbox"/> Tripoli <input type="checkbox"/> Nabatieh
About the Program	Learn Molecular biology and Functional genomic techniques used in molecular diagnostics for detecting mutations in hereditary diseases or infectious agents or for grafts, cancer,.... Program includes applied genomics, Integrated Physiology and Pathophysiology, Molecular Signaling and Pathologies and Cell Biology and Development physiopathology.
Program Learning Outcomes	<ul style="list-style-type: none"> • - Knowledge transfer and dissemination of scientific knowledge • - Design and animation of interventions in the context of scientific popularization • - Management and resolution of problems in the different areas of molecular biological analysis. • - Implementation of techniques, maintenance of equipment and instrumentation. • - Sales of scientific equipment
Fields of Work	High technician in molecular biological lab Assistant I research lab Faculty lecturer
Admission Requirements	GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University Major: <input type="checkbox"/> Chemistry <input checked="" type="checkbox"/> Biochemistry <input checked="" type="checkbox"/> Animal Biology <input type="checkbox"/> Plant Biology <input type="checkbox"/> Math <input type="checkbox"/> Computer Science <input type="checkbox"/> Electronics <input type="checkbox"/> Physics <input type="checkbox"/> Please add other accepted majors if applicable
Coordinator of Master Program	Ass-Pr. Samar El hamoui <u>Contact information:</u> UL Email address: Alternative email: simcima@ymail.com Phone number (<i>optional</i>): +961- 03 - 246315

**Professional Master - M2
Human Molecular Diagnostics
2024-2025**

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 3	DMAH 510	Cell Biology and Development physiopathology	4	16	24	40
	DMAH 512	Acquire basic formation in physiology, pharmacology and physiopathology of integrated systems	4	32	0	32
	DMAH 518	Molecular signaling and pathologies	4	24	12	36
	DMAH 522	Applied human genomics	3	24	0	24
	DMAH 524	Molecular Diagnostics: molecular biology and functional genomics techniques and methods applied in molecular diagnostics	5	32	12	44
	DMAH 526	Molecular Diagnostics: target diseases	4	24	12	36
	DMAH 528	Genetic counseling in molecular diagnostics	3	24	0	24
	DMAH 530	Knowing the Lebanese Professional Market	2	20	0	20
	ENGL 591	Scientific English & Communication skills	1		20	20
	Total			30	196	80

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 4	DMAH 580	Master Thesis	30			
	Total			30		