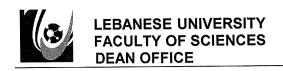


Master 2 Programs Description & Curriculum

Major: Physics & Electronics



Master Program	STIP (Signals, Telecoms, Ima	age and Speech)	
Master Program	☐ M1+ M2 Professional		2 Research
Master Type		☐ Mixed - English & French	
Teaching Language	☐ English ☐ French		abatieh
Place of Teaching (Campus)	Hadat 🗆 Fanar	☐ Tripoli ☐ Na	Datien
About the Program	advanced theoretical and Wireless Communication Speech Synthesis and Rec Embedded Systems. * Double diploma with th M2-TSI (Telecoms, Signals)	s, Computer vision, Machine I cognition, Signal Acquisition a	earning, nd Detection, France
Program Learning Outcomes	 Solid theoretical ca System design exp Prototyping skills in the wide areas of 	•	Processing
Fields of Work		opment in the private sector and some sector and some sector assistantship in Un	
Admission Requirements	Minimum GPA of 3.2 for s Major: ☐ Chemistry ☐ Biocher	for students from Lebanese Unstudents from outside Lebanese instry Animal Biology ter Science Electronics	
Coordinator of Master Program	Pr. Oussama BAZZI Contact information: UL Email address: obazzi(Alternative email: Phone number (optional)		

Research Master - M2 Signal, Telecommunications, Image and Speech (STIP) 2024-2025

		Course					
	Code	Title	Credits	Hours			
	STIP 500	Random signal processing	3	24			
	STIP 501	Time-frequency and wavelets	3	24			
	STIP 502	Image processing and pattern recognition	4	24			
Semester 3	STIP 503	Speech processing	3	24			
	STIP 504	Detection and Estimation	3	24			
	STIP 505	Information theory for Telecoms	3	24			
	STIP 506	Advanced Digital communications	3	24			
	STIP 507	Processors for Signal and Images	3	24			
	STIP 508	Advanced Signal Processing, Algorithmics	3	24			
	RMSE 500	Research Methodology and Scientific English	2	24			
	Total		30	240			

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

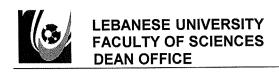


Please do not exceed one page for all the information					
Master Program	Microwave				
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research				
Teaching Language	☐ English ☐ French ☐ Mixed - English & French				
Place of Teaching (Campus)	☑ Hadat ☐ Fanar ☐ Tripoli ☐ Nabatieh				
About the Program	The microwave technology application has benefited mankind in many ways. Worldwide communications over the microwave links, both terrestrial and satellite based, are common-place. Technologies that started out in expensive military and commercial systems have filtered down to affordable items for the individual consumer, starting with microwave oven to the cellular telephone. And from the design engineer's side, our ability to model, design, build, and test practical microwave hardware has advanced incredibly, moving from hand drawn Smith charts to the common place personal computer. We are also progressing outward in the frequency spectrum. We have always been pushing to make use of higher frequencies. Now we are also moving lower to meet the upward shift in the traditional RF world. Designers in the digital world came to understand they need to learn our secrets as clock frequencies continue to increase. All of these aspects will be covered in this newly established master program				
Program Learning Outcomes	 A good foundation in the fundamental concepts and theory of microwave engineering Ability to explore the world of Electromagnetic practical applications An insight into current trends and development of the field of EM. Deep dive for practical experience in system, circuit, device and chip level design, analysis and simulation. 				
Fields of Work	 design, development, maintenance and testing of RF and microwave components and systems. 5G and 6G Wireless communication technology and satellite communication systems Remote sensing RADARs and medical equipment Products Electromagnetic compatibility and Immunity testing. Research and development position to improve existing technologies 				
Admission Requirements Coordinator	GPA: Minimum GPA of 55/100 for students from Lebanese University Minimum GPA of 3.2 for students from outside Lebanese University Major: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology □ Math □ Computer Science ☑ Electronics ☑ Physics ☑ Hydrodynamics ☑ Electrical Engineering ☑ Communication Engineering ☑ Material Sciences DrIng. Hussam Ayad				
of Master Program	Contact information: UL Email address: hayad@ul.edu.lb Alternative email: xxx@xxx.com Phone number (optional): +961- 76 - 764116				

Research Master - M2 Microwave 2024-2025

	Code	Title	Credits	Hours
	MCRO 500	Microwave Semiconductor Devices	3	24
	MCRO 501	Radio navigation & location	3	24
	MCRO 502	Linear and Non-Linear Microwave Circuits	4	32
Semester 3	MCRO 505	Electromagnetic Compatibility	3	24
	MCRO 509	Advanced Electromagnetics	3	24
	MCRO 510	Antennas & Propagation	4	32
	MCRO 511	Computational Methods in Electromagnetics	4	32
	MCRO 512	Microwave Circuit Design	4	32
	RMSE 500	Research Methodology and Scientific English	2	24
	Total		30	248

		Course		
er 4	Code	Title	Credits	Hours
Semeste	MCRO 580	Training	30	
0,	Total		30	



Please do not exceed one page for all the information

Master Program	Condensed Matter Physics					
	(Double Master 2 Diploma NOA - Le Mans University – France)					
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research					
Teaching Language	☑ English ☐ French ☐ Mixed - English & French					
Place of Teaching (Campus)	⊠ Hadat □ Fanar □ Tripoli □ Nabatieh					
About the Program	The Condensed matter Physics (PMC) is to provide a focus on the physics of condensed matter and their applications in various scientific fields: the use of advanced techniques for the investigation of the matter by electronic microscopy, atomic tomography, X-ray diffraction, optical and Mossbauer spectroscopy, thermal analysis, magnetic analysis and theoretical modeling and numerical simulation.					
Program Learning Outcomes	 excellent computational skill independent researcher 					
Fields of Work	 Doctoral thesis Researcher Research Engineer 					
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: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology					
	☐ Math ☐ Computer Science ☐ Electronics ☐ Physics ☐ Please add other accepted majors if applicable					
Coordinator of Master Program	Pr. Abbas HIJAZI <u>Contact information:</u> UL Email address: abhijaz@ul.edu.lb Alternative email: abbashijazi@yahoo.com Phone number (optional): +961- 03 - 760214					

Research Master - M2 Condensed Matter Physics 2024-2025

		Course		
	Code	Title	Credits	Hours
		Common Courses		
	Phys 501	N-Body Problem	3	24
	Phys 502	Non-Equilibrium statistical Physics and Critical Phenomena	3	24
ter 3	RMSE 500	Research Methodology and Scientific English	2	24
	Condensed Matter			
Semester	Phys 500	Modeling and Event Simulation	5	40
Ser	PHMC 500	Density Functional Theory (DFT)	3	24
	PHMC 501	Introduction to Nanophysics	3	24
	PHMC 502	Nanomagnetism Condensed Matter Physics of surfaces and interfaces	5	40
	PHMC 503	Spectrometry Optics of complex media	3	24
	PHMC 504	Numerical Methods in Physics	3	24
	Total		30	248

9r 4	Code	Title	Credits	Hours
Semester	PHMC 580	Master Thesis	30	
	Total		30	



	M	ast	ter	Pro	ogra	ams
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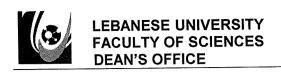
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Master Program	Subatomic Physics
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research
Teaching Language	□ English □ French □ Mixed - English & French
Place of Teaching (Campus)	☐ Hadat ☐ Fanar ☐ Tripoli ☐ Nabatieh
About the Program	The "Subatomic Master" program provides an in-depth study of both theoretical and experimental physics. The curriculum includes gauge theory, field theory, the standard model, general relativity, many-body physics, nuclear models, particle detectors, and other relevant topics. In addition to traditional subjects, the program features seminars on the emerging role of consciousness in quantum decoherence and its impact on the quantum-to-classical transition. Students also explore the evolving roles of artificial intelligence and game development in theoretical physics, highlighting innovative approaches to problem-solving and simulation.
Program Learning Outcomes	 Advanced Theoretical Knowledge: Demonstrate a comprehensive understanding of gauge theory, field theory, the standard model, and general relativity. Explain and analyze the principles of many-body physics and nuclear models. Experimental Skills: Develop proficiency in the use and understanding of particle detectors. Apply experimental techniques to investigate subatomic particles and phenomena.
Fields of Work	Completing the "Subatomic Master" program opens up diverse career options. You could become a scientist, conducting research in particle physics, or a teacher, sharing your passion for physics with others. You might also work in technology, developing innovative solutions. With your knowledge and skills, there are many exciting paths to explore
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: Chemistry □ Biochemistry □ Animal Biology □ Plant Biology □ Math □ Computer Science □ Electronics □ Physics □ Please add other accepted majors if applicable
Coordinator of Master Program	Pr. Salah Hamieh Contact information: UL Email address: shamieh@ul.edu.lb Alternative email: hamiehs@yahoo.fr Phone number (optional): +961- 70 - 705442

Research Master - M2 Subatomic physics 2024-2025

		Course		
	Code	Code Title		Hours
		Common Courses		
	Phys 501	N-Body Problem	3	24
	Phys 502	Non-Equilibrium statistical Physics and Critical Phenomena	3	24
Semester 3	RMSE 500	Research Methodology and Scientific English	2	24
	Option : Subatomic physics			
	PHTH 500	Gauge theories, abelian and non-abelian	5	40
	PHTH 501	Standard model and beyond standard model	3	24
	PHTH 502	Nuclear Model	3	24
	PHTH 503	Detector Physics	3	24
	PHTH 505	Data analysis and events simulation	3	24
	PHTH 506	Cosmology and Astroparticles	5	40
	Total		30	248

	Course					
er4	Code	Title	Credits	Hours		
Semester	PHTH 580	Master Thesis	30			
	Total		30			

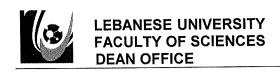


Master Program	Medical Physics and Life Imaging
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research
Teaching Language	☐ English ☐ French ☐ Mixed - English & French
Place of Teaching (Campus)	☑ Hadat ☐ Fanar ☐ Tripoli ☐ Nabatieh
About the Program	Medical physics is an interdisciplinary science involving the principles and tools of physics and engineering in medicine for diagnostic and therapeutic purposes; particularly in ionizing radiation dosimetry, instrumentation, imaging, modeling, and radiation protection. This program aims to initiate research and train scientific experts in medical physics and imaging at different scales from molecules to humans by providing solid multidisciplinary training. It allows students to acquire a broad spectrum of skills necessary in imaging (X-rays, γ , MRI, ultrasound, photonics, etc.) and medical physics to respond to the problems posed in this vast field and to provide the necessary solutions.
Program Learning Outcomes	 Understand the basic and advanced concepts and practical methods of the physics of ionizing radiation, physical dosimetry, nuclear medicine, radioprotection, and radiography. Knowledge of the operation of imaging and radiotherapy equipment, technology, and associated risk management. Basic knowledge of methodologies for biomedical research and abiding by norms and regulations. Animating and handling of a research project ensuring conception and innovation in the medical technology domain.
Fields of Work	 Pursue a PhD program with a partner university for a research and/or education career. Work as a specialized physicist in medical radiation (radiation physicists) responsible for optimizing the uses of radiation in diagnosis and therapy in terms of quantity, efficiency, and patient radiological protection. Work as a specialist in a hospital in the imaging department. Working as a technical framework assuming control of choice and use of imaging devices parks, nuclear medicine, and radiotherapy. Working as a technical framework assuming control of choice and use of imaging, nuclear medicine, and radiotherapy devices.
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: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology □ Math □ Computer Science ☑ Electronics ☑ Physics ☑ Biomedical Engineering, Biomedical Physics and related fields Pr. Jamal Charara
Coordinator of Master Program	Contact information: UL Email address: jcharara@ul.edu.lb Alternative email: xxxx@xxx.com Phone number (optional): +961- xx - xxxxxx

Research Master - M2 Medical Physics and Life Imaging 2024-2025

		Course				
	Code	Title	Credits	Course	Lab	Nb. of hours
	PMIV 502	Radiotherapy - Radiobiology - Radioprotection	5	40		40
	PMIV 503	Dosimetry - Detectors - Production	4	32		32
	PMIV 504	Applications in Medical Imaging	3	24		24
er 3	PMIV 505	Image - Signal in Imaging	4	32		32
Semester	PMIV 506	Image Reconstruction and Simulation	4	32		32
Sem	PMIV 507	Hospital Information Systems	3	24		24
	PMIV 508	Medical devices and conformity, regulation and quality	3	24		24
	PMIV 509	Medical Physics Lab	2		36	36
	RMSE 500	Research Methodology and Scientific English	2	24		24
	Total		30	232	36	268

		Course				
4 76	Code	Title	Credits	Course	Lab	Nb. of hours
Semester	PMIV 580	Master Thesis	30			
	Total		30			



Please do not exceed one page for all the information

Master Program	Title: Laser Optique Matière – Laser Optical Material
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research
Teaching Language	☐ English ☐ French ☐ Mixed - English & French
Place of Teaching (Campus)	☐ Hadat ☐ Fanar ☐ Tripoli ☐ Nabatieh
About the Program	OBJECTIVES: The Master 2 "Laser Optical Material" (LAOMT) signed a cooperation agreement of double Master's degree with the Master 2 "Photonics, Complex and Quantum Systems (PhoCQS)" at Lille University-France. The Cursus offers advanced training in the fields of lasers, photonics, optics, integrated optics and Optical Fiber, Photosensitive Materials, optical properties of solids, application of AI to the challenges of ab initio calculations. As a LAOMT graduate, you will have a deep knowledge of how to generate, manipulate and guide various types of light, the interaction between light and material, how do design laser sources. You will have also a deep knowledge in the fields of Optics, quantum optics, photonics, integrated optics. The cursus is taught in French. The academic training is completed by an internship in a research lab specialized in Optics, photonics or lasers and also in the field of Materials.
Program Learning Outcomes	Integrated optics - optical fibers, Interaction between photons and atoms, Quantum well-based Semiconductor lasers, Multiphotonics, Laser Dynamics, Imaging, tomography and coherent optical microscopy, Optical properties of solids, Photosensitive materials via laser writing, Applications of Artificial Intelligence to the challenges of ab initio calculations, Nanophotonics and mesoscopic optics, Quantum Optics, Research methodology and Scientific English.
Fields of Work	The cursus is a research option that prepares to a PhD and a career in the research and academic sector. However, it is also possible to work as research engineer in the field of laser, optics and photonics in the industrial 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: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology
	☐ Math☐ Computer Science☐ Electronics☐ Physics☐ Please add other accepted majors if applicable
Coordinator of Master Program	Pr. Jihane Jabbour Contact information: UL Email address: jihane.jabbour@ul.edu.lb Alternative email: jihanejabbour@hotmail.com Phone number (optional): +961- 70- 098 158

Research Master - M2 Laser Optical Material 2024- 2025

		Course	a			
	Code	Title	Credits	င	TS	Hours
	LAMT 503	Integrated optics-optical fibers	3	24	8	32
	LAMT 504	Interaction between photons and atoms	3	16	14	30
	LAMT 507	Quantum well-based Semiconductor lasers	2	16		16
	LAMT 508	Multiphotonics	2	16		16
က	LAMT 511	Lasers Dynamics	4	24	12	36
Semester	LAMT 512	Imaging, tomography and coherent optical microscopy	2	16	6	22
Ser	LAMT 517	Optical properties of solids	2	16		16
	LAMT 520	Nanophotonics and mesoscopic optics	2	16		16
	LAMT 521	Quantum Optics	3	24		24
	LAMT 522	Photosensitive materials via laser writing	3	12	12	24
	LAMT 523	Applications of Artificial Intelligence to the challenges of ab initio calculations	2	24		24
	RMSE 500	Research Methodology and Scientific English	2	24		24
	Total		30	228	52	280

		Course				
ter 4	Code	Title	Credits	С	TS	Hours
Semeste	LAMT 580	Research Internship	30			
	Total		30			



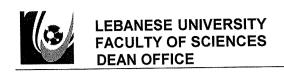
Master Programs Please <u>do not exceed one page</u> for all the information Nanosciences and Functional Materials **Master Program** ☐ M2 Professional ☑ M2 Research Master Type ☐ M1+ M2 Professional Teaching Language ☑ Mixed - English & French ☐ English ☐ French Place of Teaching (Campus) ☐ Nabatieh ☐ Tripoli ☐ Hadat The Master involves acquiring knowledge in growth and characterization of About the Program materials to master the development and properties of nanomaterials and functional materials (nanoparticles, bulk, thin layers, organic-inorganic materials, oxides, polycrystalline, carbon nanotubes, graphene...), with a view to applications in nanotechnology and nanoscience, as well as in power electronics and photovoltaics. More precisely, the objective is to bring students, at the end of the program, to a good mastery of the development and physical processes of crystal growth and advanced characterization of materials used in modern technology. This is a research Master so I will help you find a PhD easily, however the technological aspect and the hands on nature of the research will allow you to join research technological compagnies later on to master the theoretical concepts of nanosciences and functional **Program Learning Outcomes** materials • to use and master the range of materials growth and characterization techniques to establish relationships between the structure of the material and its properties in order to optimize its performance and use in advanced technology to manage a project, to guide technological choices in leading industry Fields of Work PhD in materials science and related materials Research and development position for technological compagnies **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: ☐ Plant Biology ☐ Animal Biology ☐ Chemistry ☐ Biochemistry ☐ Computer Science ☐ Electronics ☑ Physics ☐ Math ☑ Physical Chemistry Coordinator Pr. Ziad HERRO Contact information: of Master Program

UL Email address: ziad.herro@ul.edu.lb
Alternative email: ziadherro@gmail.com
Phone number (optional): +961- xx - xxxxxx

Research Master - M2 Nanosciences and Functional Materials 2024-2025

		Course			***************************************		
	Code	Title	Credits	С	TS	LS	Hours
	NMTF 500	Growth and characterization of bulk crystals and thin films	4	32			32
	NMTF 501	Hybrid materials and sol-gel process	3	24			24
	NMTF 512	Spectroscopic techniques and approaches to nanomaterials	3	24			24
m	NMTF 519	Renewable energy	3	24			24
ester	NMTF 522	Nanomaterials and nanocomposites	2	16	4		20
Semester	NMTF 523	Electronic Structure of molecules : ab initio methods and spectral analysis	3	16		15	31
	NMTF 524	Numerical Methods for Physics	4	31			31
	NMTF 525	Nanophysique et puits quantiques	3	24			24
	NMTF 526	Matériaux carbonés	3	24			24
	RMSE 500	Research Methodology and Scientific English	2	24			24
	Total		30	239	4	15	258

		Course				
4	Code	Title	Credits	ပ	TS LS	Hours
ester	NMTF 580	Master Thesis	30			
Sem	Total		30			



Master Program	Physics of Radiation-Matter Interaction (PIRM)
Master Type	☐ M1+ M2 Professional ☐ M2 Professional ☐ M2 Research
Teaching Language	☐ English
Place of Teaching (Campus)	☐ Hadat ☐ Fanar ☒ Tripoli ☐ Nabatieh
About the Program	The PIRM (Physics of Interaction Radiation and Matter) research master's program provides an advanced, selective education for physics students, focusing on light-matter interaction phenomena. It prepares students for research in fundamental and applied physics. Covering topics like quantum electrodynamics, molecular spectroscopy, and plasma physics, the program combines theoretical knowledge with experimental techniques, producing highly skilled scientists.
Program Learning Outcomes	 Analytical Abilities. Theoretical Proficiency and Experimental Techniques. Interdisciplinary Knowledge. Communication Skills, Independent and Collaborative Work.
Fields of Work	 Research and Development: Academic Research, National and international Laboratories: Working on large-scale projects related to nuclear physics, particle physics, and radiation science. Medical Physics: Radiation Therapy, Diagnostic Imaging, Nuclear Medicine. Teaching and Academia: University Lecturer/Professor, High School Teacher, Educational Outreach and Public Engagement.
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: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology □ Math □ Computer Science □ Electronics □ Physics
Coordinator of Master Program	Pr. Adnan NAJA <u>Contact information:</u> UL Email address: <u>anaja@ul.edu.lb</u> Alternative email: <u>adnan_naja81@yahoo.fr</u> Phone number: +961- 70 – 550 338

Research Master - M2 Physics of the Radiation-Matter Interaction 2024-2025

		Course		
	Code	Title	Credits	Hours
	PIRM 500	Numerical and computational methods for scientific calculations	4	28
	PIRM 501	Fundamentals of radiation-matter interaction	4	28
	PIRM 502	Quantum Electrodynamics		28
er 3	PIRM 503	Molecular Spectroscopy	4	28
Semester	PIRM 504	Electronic and magnetic properties of materials	3	21
Se	PIRM 505	Nuclear physics with heavy ions	3	21
	PIRM 506	Plasma Physics	3	21
	PIRM 507	Measurement, instrumentation and computing tools	3	21
	RMSE 500	Research Methodology and Scientific English	2	24
	Total		30	220

		Course		
	Code	Title	Credits	Hours
rer 4	PIRM 580	Master Thesis	30	
Semestr	Total		30	



Master Program	FEME Field Electro-Mechanical Engineering				
Master Type	☐ M1+ M2 Professional ☐ M2 Research				
Teaching Language	☑ English ☐ French ☐ Mixed - English & French				
Place of Teaching (Campus)	⊠ Hadat □ Fanar □ Tripoli □ Nabatieh				
About the Program	The evolution of electro-mechanical engineering and the diversity of its technologies and the emergence of new related services create new jobs at the convergence of electronics, electrical, control, telecommunications, computers, HVAC, PLUMBING, management and others. One of the main disadvantages of actual academic engineering curriculum in electromechanical is its mismatch with the Lebanese and arab markets needs concerning the graduate skills. Firms are pushed to form new graduate engineers to the field actual skills. The main purpose of this master is to form people ready and capable to work in all types of field building and industrial electromechanical engineering projects. Courses: AUTOCAD FOR CIVIL, MECHANICAL AND ELECTRICAL, ELECTRONICS FOR ELECTROMECHANICAL, HVAC SYSTEMS, PLUMBING RENEWABLE ENERGY, BMS: BUILDING MANAGEMENT SYSTEMS & SMART HOUSES, PLC AND SCADA, NI CONTROL SYSTEMS + LABVIEW, BUILDING ELECTRIFICATION +MV/LV SWITCHGEARS, MACHINES: MOTORS, GENERATORS AND CONTROL, CONTRACT ADMINISTRATION, PROJECT PLANNING DELAY				
	ANALYSIS AND MONITORING + PRIMAVERA				
OUTCOMES	The Master2 Field Electro-Mechanical Engineering FEME, forms during one				
	year engineering specialists in mechanical and electrical aspects.				
	This master wants to form mainly senior engineers or executive managers of				
	field studies in building and industrial electro-mechanical projects. So it is				
	imperative that we must insist on all practical electro-mechanical aspects as				
	well as the management and contractual aspects.				
Fields of Work	The graduate with this degree should be able to work in studies as well as on site and should be aware of building and industrial electromechanical disciplines and management issues.				
Admission Requirements	GPA: Minimum GPA of 54/100 for students from Lebanese University Minimum GPA of 3.0 for students from outside Lebanese University Major: □ Chemistry □ Biochemistry □ Animal Biology □ Plant Biology □ Math □ Computer Science ☑ Electronics □ Physics ☑ ELECTRICAL OR MECHANICAL ENGINEERING				
Coordinator	Pr. Yasser MOHANNA				
of Master Program	Contact information:				
	UL Email address: yamoha@ul.edu.lb Phone number (pational): +961- (0)3 - 769556				

Professional Master - M2 Field Electro Mechanical Engineering 2024-2025

Levelling

FEME 512 Renewable energy: solar cells, wind,.. (24 H)

FEME 515 NI control systems, Labview (24 H)

FEME 519 Project planning delay analysis and monitoring, Primavera (24 H)

FEME 503 Image processing and pattern recognition (24 H)

	Course					
	Code	Title	Credits	TS	Hours	
	FEME 510	HVAC systems	3		24	
		Plumbing: fire fighting, waste, water and sewages treatment, pumping	3		24	
	FEME 500	Management & Human Resources	2		24	
ا _چ ا	FEME 513	BMS: building management systems & smart houses	3		24	
Semester	LEEME 514	PLC and SCADA: programmable logic controller and buses	3		24	
Sen	FEME 501	AUTOCAD for civil, mechanical and electrical	3		24	
	FEME 516	Building electrification, MV/LV switchgears	3		24	
	FEME 517	Machines: motors, generators and control	3		24	
	FEME 518	Contract administration	3		24	
	FEME 502	Electronics for Electromechanical	3		24	
	ENGL 591	Scientific English & Communication skills	1	20	20	
	Total		30		260	

FEME 570 Tutorials + Seminars (60 H)

AND THE		Course		
r 4	Code	Title	Credits	Hours
Semeste	FEME 580	Master Thesis	30	
	Total		30	



Please <u>do not exceed one page</u> for all the information

Master Program	Advanced electronic and Smart Systems					
Master Type	☐ M1+ M2 Professional ☐ M2 Research					
Teaching Language	☐ English ☐ French ☒ Mixed - English & French					
Place of Teaching (Campus)	☐ Hadat					
About the Program	This proposed Master's degree program will be interdisciplinary, covering a range of topics including the automation of complex systems (such as robotics or industrial processes), advanced software engineering for electronics and intelligent systems, and advanced electronics focusing on integrated circuit design, electronic component reliability, and thermal management of electronic systems. This fusion of electronics and IT presents a valuable opportunity for companies aiming to lead the way in innovation and professional development within the global marketplace.					
Program Learning Outcomes	 Enable students to enhance their proficiency by focusing on specialized fields such as robotics, connected embedded systems, and integrated circuit design, while also fostering a comprehensive understanding essential for effective project management. Promote research and innovation by inspiring students' curiosity and creativity through engaging them in pioneering research projects, conducted in collaboration with industry and research labs. Facilitate interdisciplinary collaboration by promoting dialogue among diverse fields like electronics, computer science, mechanics, and related disciplines. This approach aims to tackle the intricate challenges of contemporary engineering and cultivate a comprehensive problem-solving perspective. Equip students for diverse career paths by delivering a versatile and adaptable education that prepares them for a multitude of opportunities in industries, research, product development, and beyond. 					
Fields of Work	Electronics and robotics engineer, Intelligent systems and integrated circuits designer, Project manager for technological innovation, Advanced technology consultant, PhD.					
Admission Requirements	GPA: Minimum GPA of 60/100 for students from Lebanese University Minimum GPA of 75/100 for students from outside Lebanese University Major:					
	☐ Chemistry ☐ Biochemistry ☐ Animal Biology ☐ Plant Biology					
	☐ Math ☐ Computer Science ☐ Electronics ☐ Physics					
	☐ Please add other accepted majors if applicable : ☒ electrical engineering					
Coordinator	Dr. Aline MSAED					
of Master Program	Contact information:					
	UL Email address: aline.msaed@ul.edu.lb					
	Alternative email: alinemsaed83@yahoo.com					
	Phone number (<i>optional</i>): +961- 71 - 235591					

Professional Master - M2 Advanced Electronic and Smart Systems 2024-2025

		Course					
	Code	Title	Credits	С	TS	LS	Hours
	EASI 500	Integrated circuit design	2	7		13	20
	EASI 501	Analog integrated circuit	2	7		13	20
	EASI 502	Reliability of electronic components and systems	2	7	13		20
	EASI 503	Thermal management of electronic components	2	7		13	20
9	EASI 504	Embedded systems	3	14		10	24
ster	EASI 505	Artificial intelligence	3	14		10	24
Semester	EASI 506	Fundamentals of software development for electronics	2	7		13	20
	EASI 507	Advanced software engineering and electronics	2	7		13	20
	EASI 508	Sensor network and internet of things	2	7		13	20
	EASI 509	Control and modeling of robot systems	4	14	10	10	34
	EASI 510	Marketing and project management	2	7		17	24
	EASI XXX	Optional	3	14		10	24
	ENGL 591	Scientific English & Communication skills	1			20	20
	Total		30	112	23	155	290

EASI 511 Electronic components and essential tools optionne obligatory course for Informatics students obligatory course for example optionne obligatory course for Electronics students

		Course					
r. 4	Code	Title	Credits	С	TS	LS	Hours
Semeste	EASI 580	Master Thesis	30				
	Total	AND THE RESERVE OF THE PARTY OF	30				



Please do not exceed one page for all the information

Master Program	PHYSIQUE ENERGETIQUE					
Master Type	☑ M1+ M2 Professional ☑ M2 Research					
Teaching Language	☐ English ☐ French ☐ Mixed - English & French					
Place of Teaching (Campus)	☐ Hadat ☐ Fanar ☒ Tripoli ☐ Nabatieh					
About the Program	Préparation des étudiants aux métiers dans ce thématique, en développant					
	des compétences scientifiques disciplinaires aussi bien que méthodologiques					
	dans les domaines de l'énergétique et de l'environnement.					
Program Learning Outcomes	Compétences théoriques, numériques et professionnelles permettant à					
	l'étudiant de se construire une vision critique et de concevoir des solutions					
	vis-à-vis des problèmes concernant la consommation et l'économie de					
	l'énergie, les énergies de substitution, l'impact sur l'environnement, la					
	pollution et le traitement des déchets.					
Fields of Work	1-Chargé de mission et /ou responsable de projet aux niveaux conception,					
	réalisation et développement industriels dans nombreux secteurs d'activité :					
	énergie (production, transformation, utilisation), génie thermique et					
	frigorifique, climatisation, traitement des effluents et des déchets,					
	dépollution, nouvelles énergies, etc					
	2-Création d'entreprises de conseil, d'études et de services techniques et					
	commerciaux dans les secteurs d'activités précités.					
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:					
	☐ Chemistry ☐ Biochemistry ☐ Animal Biology ☐ Plant Biology					
	☐ Math ☐ Computer Science ☐ Electronics ☐ Physics					
	□ Civil and Mechanical Engineering					
Coordinator	Dr. Hamed EL KHATIB					
of Master Program						
	Contact information:					
	UL Email address:					
	Alternative email: h_elkhaib68@yahoo.com					
	Phone number (<i>optional</i>): +961- 70 - 109522					

Master Professionnel - M2 Physique Energétique 2024-2025

		Cours				
	Code	Titre	Crédit s	С	TD	Nb. d'heures
	PNRJ 501	Normes et Gestion de Qualité	2	9	9	18
	PNRJ 502	Energie Solaire Thermique	4	16	16	32
m	PNRJ 503	Energie Solaire Photovoltaïque	4	16	16	32
stre	PNRJ 504	Energies Eolienne et Marémotrice	4	16	16	32
Semestre	PNRJ 505	Economie de l'Energie et Cogénération	4	16	16	32
Š	PNRJ 506	Valorisation Energétique et Traitement des Déchets	3	12	12	24
	PNRJ 507	Environnement, Pollution et Recyclage	2	9	9	18
	PNRJ 508	Economie des Entreprises et Gestion de Projets	3	12	12	24
	PNRJ 520	Métrologie et Analyse des Données	3	12	12	24
	ENGL 591	Anglais Scientifique & Technique de Communication	1		20	20
	Total		30	118	138	256

		Cours	·			
re 4	Code	Titre	Crédit s	С	TD	Nb d'heures
Semestre	PNRJ 580	Mémoire	30			
	Total		30			