



**LEBANESE UNIVERSITY
FACULTY OF SCIENCES
DEAN OFFICE**

**Master 2 Programs
Description & Curriculum
Major: Chemistry**



Master Programs

Please do not exceed one page for all the information

Master Program	Molecular Inorganic Chemistry
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 checked="" type="checkbox"/> Nabatieh
About the Program	The objectives of MIC tend to offer high level courses in chemistry, meeting the requirements of current research, and to place the student in a research situation through long-term internships in university laboratories or in the industrial sector. The specialty "Inorganic chemistry" allows the student to acquire and master knowledge in the fields of molecular inorganic and organometallic chemistry and the alternative methods of synthesis of advanced materials. An important aspect also concerns recent developments in specific characterization methods. This set will allow the student to have a solid and complete training to control the structure-activity relationships and structure-property at the level of the molecule as well as that of the material.
Program Learning Outcomes	<ul style="list-style-type: none"> • To propose high level learning in chemistry, fulfilling the requirements of current research • To place the student in situation of research through training courses of long duration in the university laboratories or the industrial sector
Fields of Work	<ul style="list-style-type: none"> • Teaching chemistry in high school • Chemistry Laboratories • Industry • Preparation of PhD
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 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> <p>Prerequisite:</p> <ul style="list-style-type: none"> • Student in M1 Molecular Chemistry and M1 Physical Chemistry • Student in M1 Analytical and M1 Environmental Chemistry at condition to have background in Organometallic Chemistry
Coordinator of Master Program	<p>Pr. Daoud Naoufal</p> <p>Contact information: UL Email address: dnaoufal@ul.edu.lb Alternative email: dr.daoud.naoufal@gmail.com Phone number (<i>optional</i>): +961- 03 - 893497</p>

**Research Master - M2
Molecular Inorganic Chemistry
2024-2025**

	Course			
	Code	Title	Credits	Hours
Semester 3	Common Part : M2R Organic Molecular Chemistry			
	MOLC 500	Advanced organometallic chemistry	3	21
	MOLC 501	Structural Chemical Analysis	3	21
	RMSE 500	Research Methodology and Scientific English	2	24
	M2R Molecular Inorganic Chemistry			
	INRG 501	Advanced inorganic chemistry	3	21
	INRG 502	Advanced coordination chemistry	3	21
	INRG 503	Method of structural and dynamic characterization by solid NMR	3	21
	INRG 504	Methods of inorganic synthesis	3	21
	INRG 506	Nanomaterials and hybrids	2	16
	INRG 507	Applied Thermodynamics	2	16
	INRG 513	Spectroscopic, microscopic and crystallographic methods for the study of inorganic materials	2	16
	INRG 514	Special topics in inorganic and organometallic chemistry	2	16
	INRG 510	Bioinorganic Chemistry	2	16
Total			30	230

	Course			
	Code	Title	Credits	Hours
Semester 4	INRG 580	Training in laboratory	30	6 mois
	Total			30



Master Programs (Please do not exceed one page for all the information)

Master Program	Physical-Chemistry, Materials and Catalysis/Chimie-Physique, Matériaux et Catalyse/ والتحفيز والمواد الفيزيائية الكيمياء
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	The program of this master's degree largely deals with problems encountered in the fields of materials, surface and interface, pharmacy, cosmetics, paints and coatings as well as problems related to catalysis and processes. It also aims to understand and master the relationships existing between the structure, chemical composition and reactivity of solid surfaces on both fundamental and applied levels, and to the chemistry of materials and the development of new materials and applications.
Program Learning Outcomes	This master: <ul style="list-style-type: none">• Prepares students to have a large competence in Physical Chemistry, Materials and Catalysis;• Prepares academic experts in research to continue their doctoral studies;• Participates to form specialists in the different fields of materials, nanomaterials, polymers, catalysts and the industrial and environmental applications of these materials.
Fields of Work	<ul style="list-style-type: none">• In research to continue doctoral studies or to be research expert in research institutions.• Working as engineer or assistant-researcher in industries such as chemical engineering, cosmetics, adhesion, paints, polymers.• Expert in the domain of chemistry of materials.
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 checked="" type="checkbox"/> Chemistry <input 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"/> Please add other accepted majors if applicable
Coordinator of Master Program	Pr. Joumana Toufaily Contact information: UL Email address: joumana.toufaily@ul.edu.lb Phone number (<i>optional</i>): +961- 70721510

Research Master - M2
Physical Chemistry, Materials and Catalysis
2024-2025

CC

	Course			
	Code	Title	Credits	Hours
Semester 3	CPMC 500	Physical Chemistry of Colloids	3	24
	CPMC 501	Physicochemical Properties of Surfaces and Interfaces and IGC	3	24
	CPMC 503	Materials and Methods of Analysis of Interfaces	2	16
	CPMC 504	Chemistry of Porous Organized Materials (microporous, mesoporous, ...)	3	24
	CPMC 508	Photophysical and Photochemical Processes	2	16
	CPMC 509	Catalysis of Solid Surfaces	2	16
	CPMC 510	Nanotechnology, nanomaterials, nanofabrication and nanopatterning	3	24
	CPMC 513	Functional Nanostructured Polymers and Conductive Polymers	2	16
	CPMC 514	Composite Materials and Ceramics	2	16
	CPMC 523	Reaction Kinetics and Catalysis	2	16
	CPMC 524	Fossil Fuels, Biomass and Catalysis	2	16
	RMSE 500	Research Methodology and Scientific English	2	24
	CPMC XXX	Elective Course	2	16
	Total			30

The student should take one out of the following courses :

CPMC 502 : Physics of Surfaces and Solid NMR

CPMC 520 : Heat, Mass Transfer and Process Engineering

CPMC 512 : Synthesis and Characterization of Advanced Polymers

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



Master Programs

Master Program	Physical chemistry of materials
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 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	<p>The prime objective is the theoretical and practical familiarization with the different organic and inorganic material synthesis techniques as well as the different characterization techniques of these different materials (Composites, energetics, catalysts, polymers, semi-conductors, bio-materials, ...).</p> <p>This formation helps students integrate in the research world and acquire a scientific spirit that is necessary for the rest of the cursus. This master is attached to the LCPM research group that partially finance the different internships of M2.</p>
Program Learning Outcomes	<ul style="list-style-type: none">- Acquire theoretical knowledge as well as high level research knowledge in Materials and physical chemistry of condensed matter.- Prepare students to integrate in industries or to do their doctorat at the Lebanese university (cotutelle) or at foreign universities.
Fields of Work	<ul style="list-style-type: none">-Research to be able to achieve a doctoral thesis in cotutelle with french partners as well as complete doctoral thesis abroad.-Development of research projects-Industries of plastic, ceramic, paint, material recycling
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 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</p>
Coordinator of Master Program	<p>Pr. Mirvat ZAKHOUR</p> <p><u>Contact information :</u> UL Email address: mzakhour@ul.edu.lb Alternative email: m_zakhour@hotmail.com</p>

Research Master - M2
Physical Chemistry of materials
2024-2025

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 3	Common Part					
	MTAP 507	Methods of materials synthesis	4	24	12	36
	MTAP 508	Characterization techniques	4	24	12	36
	M2R Physical Chemistry of Materials					
	CPMT 503	Catalytic and mesoporous materials	4	21	12	33
	CPMT 504	Composite materials and applications	3	16	12	28
	CPMT 508	Energetic materials	4	21	10	31
	CPMT 509	Nano-materials and hybrid materials	3	14	12	26
	CPMT 510	Magnetic and electrical properties of materials	3	14	10	24
	CPMT 511	Synthesis and characterization of polymer materials	3	14	10	24
	RMSE 500	Research Methodology and Scientific English	2	24		24
	Total			30	172	90

Course to validate:

Info 560 : Applied Informatics

0 Credits 12 H

	Course					
	Code	Title	Credits	C	TS	Hours
Semester 4	CPMT 580	Research Training	30			
	Total			30		



Master Programs

Master Program	Analytical Sciences
Master Type	M2 Professional
Teaching Language	Mixed - English & French
Place of Teaching (Campus)	Hadat
About the Program	The MSc in Analytical Chemistry program provides advanced education and training in the principles and applications of analytical chemistry. Students will gain expertise in modern laboratory techniques, instrumentation, and data analysis methods used to identify and quantify chemical substances. The curriculum emphasizes critical thinking, research proficiency, and problem-solving skills, preparing graduates for careers in industries such as pharmaceuticals, environmental science, food and beverage, and forensics. The program also fosters professional development, ethical standards, and effective communication, equipping students for both independent and collaborative work in multidisciplinary teams.
Program Learning Outcomes	<ol style="list-style-type: none">1. Demonstrate and apply advanced knowledge and techniques in analytical chemistry, including laboratory skills and instrumentation.2. Design, conduct, and report independent research, developing innovative solutions to complex analytical problems.3. Analyze and interpret complex data sets, and critically evaluate scientific literature and current research.4. Communicate technical information effectively and work both independently and collaboratively in multidisciplinary teams.5. Adhere to ethical, professional, and safety standards, demonstrating a commitment to continuous professional development and lifelong learning.
Fields of Work	1-Analytical Chemist; 2- Quality Control (QC) Analyst; 3- Quality Assurance (QA) Specialist; 4- Environmental Scientist; 5- Water Quality Analyst; 6- Food Chemist; 7- Petrochemical Analyst; 8- Forensic Scientist; 9- R&D Scientist; 10- Materials Analyst; 11- Clinical Research Scientist.
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: 1-Analytical Chemistry 2-Environmental Chemistry 3- Biochemistry 4- Any other equivalent degree
Coordinator of Master Program	Pr. Ismail Ibrahim Abbas Contact information: UL Email address: ismail.abbas@ul.edu.lb Alternative email: ismailabbas057@gmail.com Phone number (<i>optional</i>): +961- 3-601140

**Professional Master - M2
Analytical Sciences
2024-2025**

	Course							
	Code	Title	Credits	C	TS	LS	Hours	
Semester 3	ScAn 500	Mass Spectrometry and Reaction Mechanisms	3	16	12		28	
	ScAn 501	Optical Spectroscopy	2	16			16	
	ScAn 502	Advanced Analytical Technologies	3	24			24	
	ScAn 503	Chemical Contaminants and Analysis Strategies	2	16			16	
	ScAn 504	Atmospheric Pollutants Analysis	2	16			16	
	ScAn 505	Industrial Biotechnology	2	16			16	
	ScAn 506	Signal Treatment and Sensors	2	8	12		20	
	ScAn 507	Quality and Norms	3	24			24	
	ScAn 570	Lab: Computer Applications in Chemistry	2			30	30	
	ScAn 571	Lab: Advanced Analytical Technologies	4			60	60	
	ScAn 572	Lab: Analysis of Complex Samples	4			60	60	
	ENGL 591	Scientific English & Communication skills	1		20		20	
	Total			30	136	44	150	330

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



Master Programs

Master Program	Expertise et Traitement en Environnement (ETEN)
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	<p>This Master's program is a dual program with the Université du Littoral Côte-d'Opale (ULCO-France). It aims to train environmental specialists with the skills to:</p> <ul style="list-style-type: none"> ▪ carry out the diagnosis and assessment of pollutions and environmental impacts, ▪ propose solutions to environmental problems, ▪ integrate into the actions of the stakeholders (NGOs, ministries, industries, etc.) fighting against environmental pollutions (water/air/soil/wastes/etc.) <p>It also allows students to continue a research work (PhDs, etc.).</p>
Program Learning Outcomes	<p>The ETEN M.Sc. program provides future graduates with the environmental maturity required to be decision-makers in environmental studies related to:</p> <ul style="list-style-type: none"> ▪ water treatment and management, ▪ air and soil pollution monitoring and remediation, ▪ rehabilitation of polluted sites, ▪ waste management, ▪ environmental management, ▪ environmental mapping using GIS.
Fields of Work	<p>The job opportunities are related to the following institutions:</p> <ul style="list-style-type: none"> ▪ industries with environmental department, ▪ water companies and plants (wastewater treatment plants, etc.), ▪ non-governmental organizations (NGOs), ▪ public institutions (ministries and municipalities), ▪ quality control laboratories, ▪ certification institutions, ▪ consultancy firms, ▪ research institutes for jobs and PhDs.
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 checked="" type="checkbox"/> Public health (major environmental sciences)</p>
Coordinator of Master Program	<p>Pr. Aline Ghanem</p> <p>Contact information: UL Email address: alghanem@ul.edu.lb</p>

**Professional Master - M2
Expertise and Treatment in Environment
2024-2025**

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	ETEN 501	Communication and Professional Insertion	3	8		30	38
	ETEN 511	Environmental Management	3	16	12		28
	ETEN 513	Enterprise Economy and Management	3	16	12		28
	ETEN 514	Risks Management	2	8	12		20
	ETEN 515	Environmental Impact Assessment	1	6	6		12
	ETEN 531	Impacts of Pollutants on Human and Ecosystems	5	24	24		48
	ETEN 532	Air/Soil Remediation	4	16	24		40
	ETEN 535	Projects Conception and Feasibility Study	2	8		15	23
	ETEN 536	Geographic Information System (GIS)	4	16		30	46
	ETEN 572	Partners of the Environment	2	8	12		20
	ENGL 591	Scientific English & Communication skills	1		20		20
	Total			30	126	122	75

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



Master Programs

Master Program	Title: Industrial chemical analysis
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	<p>Three main fields are developed:</p> <ol style="list-style-type: none"> 1- Chemical analysis applied to industrial needs. 2- Formulation of chemical products such as: paints and adhesives, drugs, foods, cleaning products, etc. 3- Quality assurance of industries, in order to guarantee zero defects in the products manufactured and distributed on the market.
Program Learning Outcomes	<ul style="list-style-type: none"> • Formulation and development of new products in the sectors: food, drugs, paint and varnish, glues and ink, various polymers, detergents, etc. • Implementation and Audit of quality systems in companies and laboratories. ▪ Instrumental analysis and quality control of various industrial products
Fields of Work	<ul style="list-style-type: none"> ▪ Pharmaceutical, food, paints, cosmetics, detergents, etc. ▪ Ink and glue industry, various polymer products and packaging industry. ▪ Certification and standardization companies. ▪ Control and analysis laboratories.
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"/> Please add other accepted majors if applicable</p>
Coordinator of Master Program	<p>Pr. Chawki Oscar Saliba</p> <p>Contact information: UL Email address: csaliba@ul.edu.lb Alternative email: csaliba56@hotmail.com Phone number (<i>optional</i>): +961- 03 - 753530</p>

**Professional Master - M2
Chemical Industrial Analysis
2024-2025**

	Course						
	Code	Title	Credits	C	TS	LS	Hours
Semester 3	ACIN 510	Chemometric	3	8	13	15	36
	ACIN 511	Online analysis	2	8	14		22
	ACIN 512	Computer science - LabView	2	8		15	23
	ACIN 513	Analysis of water and to industrial effluents	2	8	14	0	22
	ACIN 532	Chemical engineering	2	8	14	0	22
	ACIN 533	Quality management	3	16	12	0	28
	ACIN 534	Right industrial practice and risk management	3	8	13	15	36
	ACIN 536	Polymers and Packages	4	16	13	15	44
	ACIN 537	Law, Society organization and Marketing	4	16	26	0	42
	ACIN 538	Formulation and analysis of industrial products	4	8	28	15	51
	ENGL 591	Scientific English & Communication skills	1		20		20
	Total			30	104	167	75

ACIN 571 : Thematic seminars, industrial visits

0 Credits, 20 H

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



Master Programs

Please do not exceed one page for all the information

Master Program	Matériaux et Applications
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"/> French
Place of Teaching (Campus)	<input checked="" type="checkbox"/> Fanar
About the Program	<p>Le but du master est de préparer les étudiants pour intégrer le milieu industriel et d'acquérir une expérience importante aussi bien dans le domaine des matériaux organiques (polymères, peintures, colles, etc...) qu'inorganiques (ciments, bétons spécifiques, métallurgie, etc...).</p> <p>La formation combine une expérience théorique et professionnelle dans ces différents domaines et donne aux étudiants l'opportunité d'exécuter leur projet de master (stage) dans l'une des industries du domaine, ce qui va leur offrir une polyvalence professionnelle.</p>
Program Learning Outcomes	<ul style="list-style-type: none">• Acquérir des connaissances assez importantes dans les différents domaines des matériaux• Se familiariser avec le milieu industriel libanais• Avoir une bonne vision dans le développement industriel qui prépare même nos étudiants à continuer en doctorat.
Fields of Work	<ul style="list-style-type: none">• Industries des matériaux (polymères, peintures, ciments, bétons spécifiques, métallurgie, etc.)• Autres industries• Enseignement• Laboratoires de recherche et de développement
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</p>
Coordinator of Master Program	<p>Pr. Michel NAKHL Contact information: UL Email address: mnakhl@ul.edu.lb</p>

**Master Professionnel - M2
Matériaux et Applications
2024-2025**

	Cours					
	Code	Titre	Crédits	Cours	TD	Nb. d'heure
Semestre 3	Tronc Commun avec le Master Recherche					
	MTAP 507	Elaboration et méthodes de synthèse des Matériaux	4	24	12	36
	MTAP 508	Techniques de caractérisation	4	24	12	36
	ENGL 591	Anglais Scientifique & Technique de Communication	1		20	20
	Parcours : Matériaux et Applications					
	MTAP 502	Traitement des données	2	16		16
	MTAP 503	Procédés Industriels de mise en forme	2	16		16
	MTAP 505	Matériaux et Environnement	2	16		16
	MTAP 509	Bio polymères et polymères inorganiques	3	16	12	28
	MTAP 511	Verres et céramiques	3	16	12	28
	MTAP 512	Matériaux métalliques	3	16	12	28
	MTAP 521	Polymères organiques et applications	3	16	12	28
	MTAP 522	Physico-chimie et rhéologie des polymères	3	16	12	28
	Total		30	176	104	280

	Cours					
	Code	Titre	Crédits	Cours	TD	Nb. d'heure
Semestre 4	MTAP 580	Mémoire	30			
	Total		30			



Master Programs

Master Program	Technologies of Perfumes, Cosmetics and Dyes
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	<p>The Master 2 of "Technologies of Perfumes, Cosmetics and Dyes" train students with high-level expertise in chemistry adapted to the needs of research and development for the industry of cosmetics, fragrances and dyes.</p> <p>The theoretical and technical knowledge acquired by the students, as well as the study of new advances in scientific research and product development in the field of cosmetics, perfumes and dyes, allow rapid and effective integration of these students as executives in the key sectors of the concerned industries.</p>
Program Learning Outcomes	<ul style="list-style-type: none">• Acquire theoretical knowledge and essential techniques in the cosmetics, perfumes and dyes industry: Provide the scientific knowledge necessary for the design and innovation of cosmetic formulations as well as formulations of perfumes and dyes.• Study the new advances in scientific research and product development in the field of perfumes, cosmetics and dyes.• Train students capable of integrating the main sectors of the concerned industries.
Fields of Work	<ul style="list-style-type: none">• Industries of cosmetics, paints and perfumes: Research & Development department, Quality Control department, Marketing ...• Certification and Standards services: services responsible for standards and regulations related to the quality of products in the sectors defined above.• Consultancy or expertise cabinets.
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 - Master 1 of Molecular Chemistry</p>
Coordinator of Master Program	<p>Pr. Samar EID</p> <p><u>Contact information:</u> UL Email address: s.eid@ul.edu.lb</p>

Professional Master - M2
Technology of Perfumes, Cosmetics and Dyes
2024-2025

	Course						
	Code	Title	Credits	C	TS	Hours	
Semester 3	TPCC 500	Chemistry of odorants	4	24	12	36	
	TPCC 502	Chemistry of cosmetics	4	24	16	40	
	TPCC 508	Dyes chemistry	5	32	12	44	
	TPCC 510	Advanced organic synthesis and medicinal chemistry	4	24	12	36	
	TPCC 513	Law, Society organization and Marketing	4	42		42	
	TPCC 514	Quality management & Manufacturing practices for cosmetics	3	16	12	28	
	TPCC 515	Industrial Formulation	3	16	10	26	
	TPCC 516	Microbiology of cosmetics	2	12	6	18	
	ENGL 591	Scientific English & Communication skills	1		20	20	
	Total			30	190	100	290

TPCC 570 : Thematic seminars, industrial visits

0 Credits, 20 H

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



Master Programs

Master Program	Title: Petrochemical Analyzes (APCH)
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	Refining and transformation of oil, physico-chemical analysis, quality assurance, simulation, Process Engineering and management.
Program Learning Outcomes	<ul style="list-style-type: none">▪ Instrumental analysis and quality control of various industrial products from oil transformation.▪ Development and validation of analysis methods.▪ Management and quality assurance of industries and analytical laboratories.▪ Monitoring and control of industrial processes
Fields of Work	<ul style="list-style-type: none">▪ Monitoring and control of industrial processes.▪ Heavy chemistry industries.▪ Control and analysis Laboratories▪ Plastic packaging industry▪ Certification and standardization companies.
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"/> Please add other accepted majors if applicable</p>
Coordinator of Master Program	Pr. Chawki Oscar Saliba Contact information: UL Email address: csaliba@ul.edu.lb Alternative email: csaliba56@hotmail.com Phone number (<i>optional</i>): +961- 03 - 753530

**Professional Master - M2
Petrochemical Analysis
2024-2025**

	Course				
	Code	Title	Credits	TS	Hours
Semester 3	APCH 500	Online Analysis	2		16
	APCH 501	Procedures for petrochemical analyses	3		24
	APCH 502	Oil production industry	2		16
	APCH 504	Industrial simulation and Virtual factory	4		32
	APCH 505	Treatment of wastewater, gas and solid waste	3		24
	APCH 506	Transportation of petroleum and derivatives	3		24
	APCH 507	Industrial problems	3		24
	APCH 508	Quality insurance of Petroleum products (ISO 9000, 14000, 17025)	3		24
	APCH 509	Instrumentation by lab view	2		24
	APCH 510	Labor law and industry organization	2		16
	APCH 511	Marketing and oil economy	2		16
	ENGL 591	Scientific English & Communication skills	1	20	20
	Total			30	20

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