

**Block view of the study programme**

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**Block 1**

THIS MASTER IS ONLY ACCESSIBLE TO STUDENTS ENROLLED BEFORE THE 2022-2023 ACADEMIC YEAR.

**Compulsory courses**

CHIM0724-1	<i>Organic chemistry</i> (english language) - Thibault GENDRON, JeanChristophe MONBALIU	Q1	50	-	-	5
CHIM0725-1	<i>Modelling molecules and extended systems</i> (english language) - Partim A - Bernard LEYH, Françoise REMACLE - Partim B - Bernard LEYH, Françoise REMACLE	Q1				5
			30	-	-	
			20	-	-	
CHIM0726-1	<i>Emerging analytical approaches</i> - Christian DAMBLON, AnneSophie DUWEZ, Gauthier EPPE, JeanFrançois FOCANT, Loïc QUINTON	Q1	50	-	-	5
CHIM0727-1	<i>Macromolecular and materials chemistry</i> (english language) - Christine JÉRÔME, Bénédicte VERTRUYEN	Q1	50	-	-	5
CHIM0728-1	<i>Design, structure and reactivity of chemical architectures</i> - Lionel DELAUDE, AnneSophie DUWEZ	Q1	50	-	-	5
CHIM0729-1	<i>Biological chemistry</i> - Christian DAMBLON, Loïc QUINTON	Q1	50	-	-	5
CHIM0096-1	<i>Nuclear chemistry</i> (english language) - Thibault GENDRON	Q2	25	-	-	3
SMEM0015-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	18

**Optional courses**

In agreement with the jury, chose courses for a total of 9 credits from among:

**Languages**

LANG4007-1	<i>English - oral expression</i> (english language) - Clara BRERETON, Véronique DOPPAGNE	Q2	-	25	-	3
LANG2971-2	<i>Academic English Writing</i> (english language) - Clara BRERETON, Véronique DOPPAGNE	Q1	25	-	-	3

**Industrial chemistry**

CHIM0074-2	<i>Seminars on industrial security</i> - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW]	Q1	15	-	[+]	3
CHIM0022-3	<i>Transport phenomena, Part A</i> (english language) - Andreas PFENNIG	Q2	30	-	-	3
CHIM0683-2	<i>Green chemistry</i> - Aurore RICHEL	Q2	5	20	-	3
CHIM0699-2	<i>Life cycle assessment - Ecodesign</i> (english language) - Angélique LÉONARD	Q1	10	30	-	3

**Synthesis and materials**

CHIM0707-1	<i>Physical organic chemistry</i> - JeanChristophe MONBALIU	Q2	25	-	-	3
CHIM9265-1	<i>Introduction to continuous flow organic synthesis</i> (english language) - JeanChristophe MONBALIU - [1d Vis.]	Q1	15	10	[+]	3
CHIM0731-1	<i>Chemistry and physical-chemistry of peptide and protein assemblies</i> - JeanChristophe MONBALIU, Loïc QUINTON	Q1	25	-	-	3
CHIM0656-1	<i>Organometallic catalysis</i> - Lionel DELAUDE	Q1	25	-	-	3
CHIM0219-1	<i>Industrial polymers</i> - Christine JÉRÔME	Q2	25	-	-	3
CHIM9234-2	<i>Polymers and environment</i> (english language) - Part A - Philippe LECOMTE - Part B - Philippe LECOMTE	Q1				3
			15	-	-	
			10	-	-	
CHIM9260-1	<i>Properties and applications of surfactants</i> - N...	Q2	25	-	-	3
CHIM9230-1	<i>Nanomaterials: synthesis, properties and applications</i> (english language) -	Q1	25	-	-	3

AnneSophie DUWEZ, Christine JÉRÔME, Damien SLUYSMANS

CHIM0742-1 *Chemistry of materials and sustainable development* - Catherine HENRIST - [0,5d Vis., 10h Mon. WS] Q1 15 - [+]**3**

#### Techniques of characterization and analysis

BIOL0114-4 *Electronic microscopies, Part A* - Philippe COMPÈRE Q2 15 - - **3**

CHIM9236-2 *Microstructure of materials : characterization techniques* Q2 **3**  
 - Part A - Catherine HENRIST 15 - -  
 - Part B - Catherine HENRIST 10 - -

CHIM9264-1 *Electrical and magnetic properties of materials* - Bénédicte VERTRUYEN Q1 15 10 - **3**

CHIM0732-1 *Characterisation of surfaces and interfaces* - AnneSophie DUWEZ, Damien SLUYSMANS Q1 25 - - **3**

CHIM0220-1 *Recent nuclear magnetic resonance (NMR) methods in chemistry* - Christian DAMBLON Q1 25 - - **3**

CHIM9257-2 *Introduction to solid state NMR (english language)* Q1 **3**  
 - Part A - Christian DAMBLON, Philippe LECOMTE 15 - -  
 - Part B - Christian DAMBLON, Philippe LECOMTE 10 - -

CHIM9221-1 *Advanced techniques in nuclear magnetic resonance of biomolecules* - Christian DAMBLON Q1 25 - - **3**

CHIM0653-1 *Imaging and marking techniques* - Thibault GENDRON Q2 25 - - **3**

CHIM0657-1 *Emerging techniques in the science of separation* - JeanFrançois FOCANT, PierreHugues STEFANUTO Q2 10 15 - **3**

CHIM9259-2 *Analytical techniques in forensic chemistry* - JeanFrançois FOCANT, PierreHugues STEFANUTO Q2 15 10 - **3**

CRIS0204-1 *Complement of crystallography* - Frédéric HATERT Q2 15 10 - **3**

CHIM9310-1 *Advanced spectroscopic analysis methods* - Gauthier EPPE, Cédric MALHERBE Q2 20 5 - **3**

CHIM0743-1 *Introduction to data handling with MetaboAnalyst (english language)* - PierreHugues STEFANUTO Q1 15 10 - **3**

CHIM0744-1 *Introduction to quality assurance* - JeanFrançois FOCANT Q2 15 - - **3**

#### Biological chemistry

BIOC0232-1 *Macromolecular biochemistry (english language)* - Moreno GALLENi Q1 25 - - **3**

CHIM9221-1 *Advanced techniques in nuclear magnetic resonance of biomolecules* - Christian DAMBLON Q1 25 - - **3**

CHIM9262-1 *Biomimetic chemistry : when the Man is inspired by nature* - Loïc QUINTON Q2 25 - - **3**

CHIM0731-1 *Chemistry and physical-chemistry of peptide and protein assemblies* - JeanChristophe MONBALIU, Loïc QUINTON Q1 25 - - **3**

BIOC0719-1 *Enzymology* - André MATAGNE - [10h SEM] Q2 15 - [+]**3**

CHIM0218-1 *Elements of medicinal chemistry* - Bernard PIROTTE - [5h SEM] Q2 20 - [+]**3**

CHIM0683-2 *Green chemistry* - Aurore RICHEL Q2 5 20 - **3**

#### Modelling and molecular dynamics

CHIM0707-1 *Physical organic chemistry* - JeanChristophe MONBALIU Q2 25 - - **3**

CHIM0734-1 *Photochemistry* - Bernard LEYH Q1 15 10 - **3**

CHIM9233-1 *Molecular logic (english language)* - Françoise REMACLE Q2 25 - - **3**

SPAT0054-1 *Astrophysics and astrochemistry* - Michaël DE BECKER Q2 20 - - **3**

#### Sciences teaching

CHIM0735-1	<i>Sciences and chemistry history</i> - Bernard LEYH	Q1	15	10	-	3
CHIM0736-1	<i>Conceptual approach to basic chemistry</i> - Bernard LEYH	Q2	15	10	-	3
PHIL0040-1	<i>Introduction to the philosophy of sciences</i> - Laurence BOUQUIAUX	Q1	30	-	-	3
DOCU0455-1	<i>Introduction to critical thinking</i> - Theory - Yaël NAZÉ - Practice - Yaël NAZÉ	Q2	10	-	-	3
			-	6	-	

**Bloc d'aménagement du programme de l'année**
**Additional ECTS Master in chemistry (60 ECTS)**
**Optional courses**

Students will follow a study programme worth 15 to 60 ECTS selected from the courses below. The programme will be established by the master's jury for each student according to their qualifications.

CHIM0704-1	<i>Theoretical chemistry</i> - Françoise REMACLE - [15h QA Sess.]	Q1	25	-	[+]	4
CHIM9287-1	<i>Theoretical and quantum chemistry</i> - Françoise REMACLE - [15h QA Sess.]	Q1	30	20	[+]	4
CHIM9288-1	<i>Spectroscopy and statistical thermodynamics elements</i> - Bernard LEYH - [20h QA Sess.]	Q1	30	-	[+]	4
CHIM0278-1	<i>Organic chemistry III</i> - Lionel DELAUDE - [15h QA Sess.]	Q1	30	55	[+]	7
CHIM9289-1	<i>Analytical chemistry III - Physical methods</i> - Physico-chemical methods of analysis - Gauthier EPPE - Electrochemical methods of analysis - Gauthier EPPE - Travaux pratiques et répétitions - Gauthier EPPE - [15h QA Sess.]	Q1	15	-	-	8
			15	-	-	
			-	65	[+]	
CHIM0678-1	<i>Biochemistry</i> - André MATAGNE	Q1	30	-	-	3
INFO0202-1	<i>Programming Methods Applied to Chemistry</i> - Peter SCHLAGHECK	Q2	15	15	-	2
PHYS0968-1	<i>Signal processing</i> - Alejandro SILHANEK	Q2	25	20	-	4
CHIM9285-1	<i>Chemical Kinetics, Introduction to Spectroscopy and Group Theory</i> - Bernard LEYH - [20h QA Sess.]	Q2	35	-	[+]	6
CHIM9291-1	<i>Structural analysis</i> - Christian DAMBLON, Loïc QUINTON	Q2	20	25	-	4
CHIM0209-2	<i>Inorganic chemistry</i> - Bénédicte VERTRUYEN - [8h QA Sess.]	Q2	30	70	[+]	8
CHIM0283-4	<i>Chemistry of the macromolecules</i> - Christine JÉRÔME	Q2	20	20	-	4
PHIL0201-1	<i>Elements of sciences philosophy</i> - Julien PIERON	Q2	15	-	-	2
CHIM9292-1	<i>chemical Kinetics</i> - Bernard LEYH - [10h QA Sess.]	Q2	20	-	[+]	3
CHIM9293-1	<i>Spectroscopy integrated laboratory</i> - Christian DAMBLON, Gauthier EPPE, Bernard LEYH, JeanChristophe MONBALIU, Loïc QUINTON	Q2	-	100	-	6
CHIM9294-1	<i>Bibliographic research, research project</i> - Caroline COLLETTE, JeanChristophe MONBALIU - [30h Internship]	Q2	5	-	[+]	2
LANG0076-1	<i>English 1 (english language)</i> - Daphné BUI, Véronique DOPPAGNE	TA	45	-	-	4
LANG0077-1	<i>English 2 (english language)</i> - Clara BRERETON, Véronique DOPPAGNE	TA	45	-	-	4