

**Cycle view of the study programme**

		B1	Or	Th	Pr	Au	Cr
<b>Compulsory courses (B1 : 51Cr)</b>							
CHIM0724-1	<i>Organic chemistry</i> (english language) - JeanChristophe MONBALIU, Patrick RISS	B1	Q1	50	-	-	5
CHIM0725-1	<i>Modelling molecules and extended systems</i> (english language) - <i>Partim A</i> - Bernard LEYH, Françoise REMACLE - <i>Partim B</i> - Bernard LEYH, Françoise REMACLE	B1	Q1	30 20	- -	- -	5
CHIM0726-1	<i>Emerging analytical approaches</i> - Christian DAMBLON, AnneSophie DUWEZ, Gauthier EPPE, JeanFrançois FOCANT, Loïc QUINTON	B1	Q1	50	-	-	5
CHIM0727-1	<i>Macromolecular and materials chemistry</i> (english language) - Christine JÉRÔME, Bénédicte VERTRUYEN	B1	Q1	50	-	-	5
CHIM0728-1	<i>Design, structure and reactivity of chemical architectures</i> - Lionel DELAUBE, AnneSophie DUWEZ	B1	Q1	50	-	-	5
CHIM0729-1	<i>Biological chemistry</i> - Christian DAMBLON, Loïc QUINTON	B1	Q1	50	-	-	5
CHIM0096-1	<i>Nuclear chemistry</i> (english language) - Patrick RISS	B1	Q2	25	-	-	3
SMEM0015-1	<i>Final thesis</i> - COLLÉGIALITÉ	B1	TA	-	-	-	18
<b>Optional courses (B1 : 9Cr)</b>							
In agreement with the jury, chose courses for a total of 9 credits from among: (B1 : 9Cr)							
<b>Languages</b>							
LANG4007-1	<i>English - oral expression</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, ISLV	B1	Q2	-	25	-	3
LANG2971-2	<i>Academic English Writing</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, ISLV	B1	Q1	25	-	-	3
<b>Industrial chemistry</b>							
CHIM0074-2	<i>Seminars on industrial security</i> - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW]	B1	Q1	15	-	[+]	3
CHIM0081-3	<i>Industrial Chemistry Processes, structure of chemical industry</i> - Angélique LÉONARD - [1d FW]	B1	Q1	30	-	[+]	3
CHIM0022-3	<i>Transport phenomena, Part A</i> (english language) - Andreas PFENNIG	B1	Q2	30	-	-	3
CHIM0699-2	<i>Life cycle assessment - Ecodesign</i> (english language) - Angélique LÉONARD, N...	B1	Q1	10	30	-	3
CHIM0742-1	<i>Chemistry of materials and sustainable development</i> - Catherine HENRIST - [0,5d Vis., 10h Mon. WS]	B1	Q1	15	-	[+]	3
<b>Synthesis and materials</b>							
CHIM0707-1	<i>Physical organic chemistry</i> - JeanChristophe MONBALIU	B1	Q2	25	-	-	3
CHIM9265-1	<i>Introduction to continuous flow organic synthesis</i> (english language) - JeanChristophe MONBALIU - [1d Vis.]	B1	Q1	15	10	[+]	3
CHIM0731-1	<i>Chemistry and physical-chemistry of peptide and protein assemblies</i> - JeanChristophe MONBALIU, Loïc QUINTON	B1	Q1	25	-	-	3
CHIM0656-1	<i>Organometallic catalysis</i> - Lionel DELAUBE	B1	Q1	25	-	-	3
CHIM0219-1	<i>Industrial polymers</i> - Christine JÉRÔME	B1	Q2	25	-	-	3
CHIM9234-2	<i>Polymers and environment</i> (english language) - <i>Part A</i> - Philippe LECOMTE - <i>Part B</i> - Philippe LECOMTE	B1	Q1	15 10	- -	- -	3
CHIM9260-1	<i>Properties and applications of surfactants</i> - Guy BROZE,	B1	Q2	25	-	-	3

#### EBUGNE

CHIM9230-1	<i>Nanomaterials, (electro)synthesis and applications</i> (english language) - Christophe DETREMBLEUR, Christine JÉRÔME	B1	Q1	25	-	-	3
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#### Techniques of characterization and analysis

BIOL0114-4	<i>Electronic microscopies, Part A</i> - Philippe COMPÈRE	B1	Q2	15	-	-	3
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CHIM9236-2	<i>Microstructure of materials : characterization techniques</i> - Part A - Catherine HENRIST - Part B - Catherine HENRIST	B1	Q2	15	-	-	3
				10	-	-	

CHIM9264-1	<i>Electrical and magnetic properties of materials</i> - Bénédicte VERTRUYEN	B1	Q1	15	10	-	3
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CHIM0732-1	<i>Characterisation of surfaces and interfaces</i> - AnneSophie DUWEZ, Damien SLUYSMANS	B1	Q1	25	-	-	3
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CHIM0220-1	<i>Recent nuclear magnetic resonance (NMR) methods in chemistry</i> - Christian DAMBLON	B1	Q1	25	-	-	3
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CHIM9257-2	<i>Introduction to solid state NMR</i> (english language) - Part A - Christian DAMBLON, Philippe LECOMTE - Part B - Christian DAMBLON, Philippe LECOMTE	B1	Q1	15	-	-	3
				10	-	-	

CHIM9221-1	<i>Advanced techniques in nuclear magnetic resonance of biomolecules</i> - Christian DAMBLON	B1	Q1	25	-	-	3
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CHIM0653-1	<i>Imaging and marking techniques</i> - Patrick RISS	B1	Q2	25	-	-	3
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CHIM0657-1	<i>Emerging techniques in the science of separation</i> - JeanFrançois FOCANT, PierreHugues STEFANUTO	B1	Q2	25	-	-	3
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CHIM9259-2	<i>Analytical techniques in forensic chemistry</i> - JeanFrançois FOCANT, PierreHugues STEFANUTO	B1	Q2	15	10	-	3
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CRIS0204-1	<i>Complement of crystallography</i> - Frédéric HATERT	B1	Q2	15	10	-	3
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CHIM9310-1	<i>Advanced spectroscopic analysis methods</i> - Gauthier EPPE, Cédric MALHERBE	B1	Q2	20	5	-	3
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CHIM0743-1	<i>Introduction to data handling with MetaboAnalyst</i> (english language) - PierreHugues STEFANUTO	B1	Q1	15	10	-	3
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#### Biological chemistry

BIOC0232-1	<i>Macromolecular biochemistry</i> (english language) - Moreno GALLEN	B1	Q1	25	-	-	3
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CHIM9221-1	<i>Advanced techniques in nuclear magnetic resonance of biomolecules</i> - Christian DAMBLON	B1	Q1	25	-	-	3
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CHIM9262-1	<i>Biomimetic chemistry : when the Man is inspired by nature</i> - Loïc QUINTON	B1	Q2	25	-	-	3
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CHIM0731-1	<i>Chemistry and physical-chemistry of peptide and protein assemblies</i> - JeanChristophe MONBALIU, Loïc QUINTON	B1	Q1	25	-	-	3
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BIOC0719-1	<i>Enzymology</i> - André MATAGNE - [10h SEM]	B1	Q2	15	-	[+]	3
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CHIM0218-1	<i>Elements of medicinal chemistry</i> - Bernard PIROTTE - [5h SEM]	B1	Q2	20	-	[+]	3
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CHIM0683-2	<i>Green chemistry</i> - Aurore RICHEL	B1	Q2	5	20	-	3
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#### Modelling and molecular dynamics

CHIM0707-1	<i>Physical organic chemistry</i> - JeanChristophe MONBALIU	B1	Q2	25	-	-	3
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CHIM0734-1	<i>Photochemistry</i> - Bernard LEYH	B1	Q2	15	10	-	3
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CHIM9233-1	<i>Molecular logic</i> (english language) - Françoise REMACLE	B1	Q2	25	-	-	3
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SPAT0054-1	<i>Astrophysics and astrochemistry</i> - Michaël DE BECKER	B1	Q2	15	5	-	3
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#### Didactics of science

CHIM0735-1	<i>Sciences and chemistry history</i> - Bernard LEYH	B1	Q1	15	10	-	3
CHIM0736-1	<i>Conceptual approach to basic chemistry</i> - Bernard LEYH	B1	Q2	15	10	-	3
PHIL0040-1	<i>Introduction to the philosophy of sciences</i> - Laurence BOUQUIAUX	B1	Q1	30	-	-	3
DOCU0455-1	<i>Introduction to critical thinking</i> - Theory - Yaël NAZÉ - Practice - Yaël NAZÉ	B1	Q2	10	-	-	3
				-	5	-	

## Additional ECTS Master in chemistry (60 ECTS)

### Optional courses (B0 : 60Cr)

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. (B0 : 60Cr)

CHIM0704-1	<i>Theoretical chemistry</i> - Françoise REMACLE - [15h QA Sess.]	B0	Q1	25	-	[+]	4
CHIM9287-1	<i>Theoretical and quantum chemistry</i> - Françoise REMACLE - [15h QA Sess.]	B0	Q1	30	10	[+]	4
CHIM9288-1	<i>Spectroscopy and statistical thermodynamics elements</i> - Bernard LEYH - [20h QA Sess.]	B0	Q1	30	-	[+]	4
CHIM0278-1	<i>Organic chemistry III</i> - Lionel DELAUDE - [15h QA Sess.]	B0	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.]	B0	Q1	15	-	-	8
				15	-	-	
				-	65	[+]	
CHIM0678-1	<i>Biochemistry</i> - André MATAGNE	B0	Q1	30	-	-	3
INFO0202-1	<i>Programming Methods Applied to Chemistry</i> - Peter SCHLAGHECK	B0	Q2	15	15	-	2
PHYS0968-1	<i>Signal processing</i> - Alejandro SILHANEK	B0	Q2	25	20	-	4
CHIM9285-1	<i>Chemical Kinetics, Introduction to Spectroscopy and Group Theory</i> - Bernard LEYH - [20h QA Sess.]	B0	Q2	35	-	[+]	6
CHIM9291-1	<i>Structural analysis</i> - Christian DAMBLON, Loïc QUINTON	B0	Q2	20	25	-	4
CHIM0209-2	<i>Inorganic chemistry</i> - Bénédicte VERTRUYEN - [8h QA Sess.]	B0	Q2	30	70	[+]	8
CHIM0283-4	<i>Chemistry of the macromolecules</i> - Christine JÉRÔME	B0	Q2	20	20	-	4
PHIL0201-1	<i>Elements of sciences philosophy</i> - Julien PIERON	B0	Q2	15	-	-	2
CHIM9292-1	<i>chemical Kinetics</i> - Bernard LEYH - [10h QA Sess.]	B0	Q2	20	-	[+]	3
CHIM9293-1	<i>spectroscopy Integrated laboratory</i> - Christian DAMBLON, Gauthier EPPE, Bernard LEYH, JeanChristophe MONBALIU, Loïc QUINTON, Françoise REMACLE	B0	Q2	-	105	-	6
CHIM9294-1	<i>Bibliographic research, research project</i> - Caroline COLLETTE, JeanChristophe MONBALIU - [30h Internship]	B0	Q2	5	-	[+]	2
LANG0076-1	<i>English 1 (english language)</i> - Véronique DOPPAGNE, ISLV	B0	TA	45	-	-	4
LANG0077-1	<i>English 2 (english language)</i> - Clara BRERETON, Véronique DOPPAGNE, ISLV	B0	TA	45	-	-	4