

**Cycle view of the study programme**

		B1	Or	Th	Pr	Au	Cr
<b>Compulsory courses (B1 : 48Cr, B2 : 15Cr)</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 DELAUDE, 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
SMEM0044-1	<i>Dissertation, Part A</i> - COLLÉGIALITÉ	B1	Q2	-	-	-	15
SMEM0044-2	<i>Dissertation, Part B</i> - COLLÉGIALITÉ	B2	Q1	-	-	-	15
<b>Optional courses (B1 : 12Cr, B2 : 45Cr)</b>							
In agreement with the Jury, choose courses for a total of 27 credits among: (B1 : 12Cr, B2 : 15Cr)							
<b>Language</b>							
LANG4007-1	<i>English - oral expression</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, ISLV	-	Q2	-	25	-	3
LANG2971-2	<i>Academic English Writing</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, ISLV	-	Q1	25	-	-	3
<b>Industrial chemistry</b>							
CHIM0074-2	<i>Seminars on industrial security</i> - JeanLuc BOZET, Angélique LÉONARD, Dominique TOYE - [2d FW]	-	Q1	15	-	[+]	3
CHIM0081-3	<i>Industrial Chemistry Processes, structure of chemical industry</i> - Angélique LÉONARD - [1d FW]	-	Q1	30	-	[+]	3
CHIM0022-3	<i>Transport phenomena, Part A</i> (english language) - Andreas PFENNIG	-	Q2	30	-	-	3
CHIM0699-2	<i>Life cycle assessment - Ecodesign</i> (english language) - Angélique LÉONARD, N...	-	Q1	10	30	-	3
CHIM0742-1	<i>Chemistry of materials and sustainable development</i> - Catherine HENRIST - [0,5d Vis., 10h Mon. WS]	-	Q1	15	-	[+]	3
<b>Synthesis and materials</b>							
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) - <i>Part A</i> - Philippe LECOMTE - <i>Part B</i> - Philippe LECOMTE	-	Q1	15 10	- -	- -	3

CHIM9260-1	<i>Properties and applications of surfactants</i> - Guy BROZE, Antoine DEBUIGNE	-	Q2	25	-	-	3
CHIM9230-1	<i>Nanomaterials, (electro)synthesis and applications</i> (english language) - Christophe DETREMBLEUR, Christine JÉRÔME	-	Q1	25	-	-	3
<b>Techniques of characterization and analysis</b>							
BIOL0114-4	<i>Electronic microscopies, Part A</i> - Philippe COMPÈRE	-	Q2	15	-	-	3
CHIM9236-2	<i>Microstructure of materials : characterization techniques</i> - Part A - Catherine HENRIST - Part B - Catherine HENRIST	-	Q2	15	-	-	3
CHIM9264-1	<i>Electrical and magnetic properties of materials</i> - Bénédicte VERTRUYEN	-	Q1	15	10	-	3
CHIM0732-1	<i>Characterisation of surfaces and interfaces</i> - AnneSophie DUWEZ, Damien SLUYSMANS	-	Q1	25	-	-	3
CHIM0220-1	<i>Recent nuclear magnetic resonance (NMR) methods in chemistry</i> - Christian DAMBLON	-	Q1	25	-	-	3
CHIM9257-2	<i>Introduction to solid state NMR</i> (english language) - Part A - Christian DAMBLON, Philippe LECOMTE - Part B - Christian DAMBLON, Philippe LECOMTE	-	Q1	15	-	-	3
CHIM9221-1	<i>Advanced techniques in nuclear magnetic resonance of biomolecules</i> - Christian DAMBLON	-	Q1	25	-	-	3
CHIM0653-1	<i>Imaging and marking techniques</i> - Patrick RISS	-	Q2	25	-	-	3
CHIM0657-1	<i>Emerging techniques in the science of separation</i> - JeanFrançois FOCANT, PierreHugues STEFANUTO	-	Q2	25	-	-	3
CHIM9259-2	<i>Analytical techniques in forensic chemistry</i> - JeanFrançois FOCANT, PierreHugues STEFANUTO	-	Q2	15	10	-	3
CRIS0204-1	<i>Complement of crystallography</i> - Frédéric HATERT	-	Q2	15	10	-	3
CHIM9310-1	<i>Advanced spectroscopic analysis methods</i> - Gauthier EPPE, Cédric MALHERBE	-	Q2	20	5	-	3
CHIM0743-1	<i>Introduction to data handling with MetaboAnalyst</i> (english language) - PierreHugues STEFANUTO	-	Q1	15	10	-	3
<b>Biological chemistry</b>							
BIOC0232-1	<i>Macromolecular biochemistry</i> (english language) - Moreno GALLEN	-	Q1	25	-	-	3
CHIM9221-1	<i>Advanced techniques in nuclear magnetic resonance of biomolecules</i> - Christian DAMBLON	-	Q1	25	-	-	3
CHIM9262-1	<i>Biomimetic chemistry : when the Man is inspired by nature</i> - Loïc QUINTON	-	Q2	25	-	-	3
CHIM0731-1	<i>Chemistry and physical-chemistry of peptide and protein assemblies</i> - JeanChristophe MONBALIU, Loïc QUINTON	-	Q1	25	-	-	3
BIOC0719-1	<i>Enzymology</i> - André MATAGNE - [10h SEM]	-	Q2	15	-	[+]	3
CHIM0218-1	<i>Elements of medicinal chemistry</i> - Bernard PIROTTE - [5h SEM]	-	Q2	20	-	[+]	3
CHIM0683-2	<i>Green chemistry</i> - Aurore RICHEL	-	Q2	5	20	-	3
<b>Modelling and molecular dynamics</b>							
CHIM0707-1	<i>Physical organic chemistry</i> - JeanChristophe MONBALIU	-	Q2	25	-	-	3
CHIM0734-1	<i>Photochemistry</i> - Bernard LEYH	-	Q2	15	10	-	3
CHIM9233-1	<i>Molecular logic</i> (english language) - Françoise REMACLE	-	Q2	25	-	-	3
SPAT0054-1	<i>Astrophysics and astrochemistry</i> - Michaël DE BECKER	-	Q2	15	5	-	3

#### Didactics of science

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> - <i>Theory</i> - Yaël NAZÉ - <i>Practice</i> - Yaël NAZÉ	-	Q2	10	-	-	3
				5	-	-	

[...] Or for a maximum of 9 credits in the course programmes of other sectors in the Faculty of Science, other faculties or other universities. Any request for exemption from the rule of 9 credits maximum will be examined by the jury.

#### Choose one focus from the following : (B2 : 1Nbr)

##### Research Focus (B2 : 30Cr)

Students must do a 5-month research internship in a university or research centre, in Belgium or preferably abroad.

SSTG0056-1	<i>Research placement (english language) - Internship</i> - COLLÉGIALITÉ - [5mois]	B2	Q2	-	-	[+]	30
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##### Teaching focus (B2 : 30Cr)

AESS1216-1	<i>Special didactics in chemistry : course and exercises (1st part)</i> - Bernard LEYH	B2	TA	40	-	-	3
AESS1219-1	<i>Special didactics in chemistry : placements (1st part)</i> - <i>Observation placements</i> - Bernard LEYH - [10h Internship] - <i>Teaching placements</i> - Bernard LEYH - [20h Internship] - <i>Reflexive practical work</i> - Bernard LEYH	B2	TA	-	-	[+]	3
				5	-		
AESS2216-1	<i>Special didactics in chemistry : course and exercises (2nd part)</i> - Bernard LEYH	B2	TA	35	-	-	4
AESS2219-1	<i>Special didactics in chemistry : placements (2nd part)</i> - <i>Teaching placements</i> - Bernard LEYH - [20h Internship] - <i>Reflexive practical work</i> - Bernard LEYH - <i>Extra-scholar teaching activities</i> - Bernard LEYH	B2	TA	-	-	[+]	5
				5	-		
				10	-		
AESS0202-1	<i>General didactics: course and exercises ; observation placements ; reflexive practices</i> - Annick FAGNANT - [10h Internship]	B2	TA	30	10	[+]	4
AESS0246-1	<i>Analysis of scholastic institutions and key-players, educational policies</i> - Dominique LAFONTAINE - Suppl : MarieThérèse DELHOUNE	B2	Q1	15	-	-	1
AESS0248-1	<i>Elements of sociology of education</i> - JeanFrançois GUILLAUME	B2	Q2	10	-	-	1
AESS0004-1	<i>Media education</i> - Jérémy HAMERS	B2	Q1	15	-	-	1
AESS0249-1	<i>Interdisciplinary seminar</i> - Annick FAGNANT	B2	Q1	15	-	-	1
AESS0140-1	<i>Professional ethics and training to neutrality and citizenship</i> - Anne HERLA	B2	Q2	25	-	-	2
AESS0143-1	<i>Educational Psychology of adolescents and young adults</i> - Annick FAGNANT, Christelle GOFFIN	B2	Q1	15	-	-	2
AESS0339-1	<i>Understand and manage the diversity of public schools</i> - Ariane BAYE	B2	Q2	10	15	-	3

##### Professional Focus

Students must do a 5-month internship in a company, in Belgium or abroad.

SSTG0057-1	<i>Industrial research placement (english language)</i> - COLLÉGIALITÉ	B2	Q2	-	-	[+]	30
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- [5mois Internship]

## Additional ECTS Master in chemistry (120 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> - <i>Physico-chemical methods of analysis</i> - Gauthier EPPE - <i>Electrochemical methods of analysis</i> - Gauthier EPPE - <i>Travaux pratiques et répétitions</i> - 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</i> (english language) - Véronique DOPPAGNE, ISLV	B0	TA	45	-	-	4
LANG0077-1	<i>English 2</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, ISLV	B0	TA	45	-	-	4